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Abstract–This Bulletin lists 1768 meteorites, bringing the total known meteorites to over 30,000 at 30,907. Of these, 1010 are from Antarctica, 569 from Africa, 92 from Asia (83 of which are from Oman), 85 from North America, one from South America and 11 from Europe. The Bulletin reports seven falls (Benguerir, Bukhara, Kasauli, Maigatari-Danduma, Oum Dreyga, Rahimyar Khan, and San Michele). Noteworthy specimens include 20 lunar meteorites, four Martian meteorites, two pallasites, three mesosiderites, and two Bencubbin-like meteorites. Additional information can be found at http://meteoriticalsociety.org/bulletin/database.html.

INTRODUCTION

The Meteoritical Bulletin publishes announcements by the Meteoritical Society's Meteorite Nomenclature Committee of newly described and classified meteorites. Several conventions are followed in this document. Shock classifications conform to the scheme of Stöffler et al. (1991). The scale of Wlotzka (1993) is used to describe weathering grades, except as noted. For chondrite groups, petrologic types, shock stages, and weathering grades, slashes (e.g., H5/6) indicate transitional assignments. Hyphens in petrologic type assignments for chondrites (e.g., H5–6) indicate the range of types observed in breccias. Group names such as "L(LL)" indicate uncertain assignments, with the less probable group in parentheses. The word "ungrouped" indicates that a meteorite can not be fit into existing classification schemes. The word "anomalous" is used if a meteorite can be assigned to an established class, but differs from other members of that class in a significant way. All italicized abbreviations refer to addresses tabulated at the end of this document.

NEWLY DESCRIBED METEORITES

Acfer 360 **27°29′N, 3°46′E**
Algeria
Found 2002, November 17
Achondrite (ureilite)

A 68 g stone was found in the Acfer region of the Algerian Sahara. Mineralogy and classification (E.-M. Chamorro, K. Pistre, P. Beck, *ENSL*, P. Grandjean, *UCB*): the meteorite has a typical ureilite texture, mm-sized crystals, triple junctions, and curved intergranular boundaries are observed. The mineral composition is olivine (Fo_{83}) 90 vol%, pigeonite ($En_{75}Wo_8$) 8 vol% and interstitial carbonaceous material 2 vol%. Olivine often contains metal inclusions, and pigeonite sometimes includes rounded olivine grains. Metal-rich rims surround silicate grain boundaries. Flakes of dark, carbonaceous material consist of diamonds in the form of small grains within graphite, as revealed by Raman spectroscopy. Weathering grade appears to be minor. Specimens: main mass, F. Beroud and C. Boucher; type specimen 14 g, *ENSL*.

African Meteorites
Table 1 lists 78 meteorites found at known locations in Africa.

American Meteorites
Table 2 lists 76 meteorites found in North and South America.

Antarctic ANSMET Meteorites
(850 meteorites)
Antarctica
Found 2002–2003
Appendix 1 brings up to date the list of officially announced meteorites from the U.S. Antarctic Meteorite Program. Some 11,636 ANSMET meteorites have been listed in previous editions of *The Meteoritical Bulletin*; these meteorites bring the total to 12,486. Listed are the classifications, masses, degrees of weathering, olivine and pyroxene compositions, pairing information, ice fields upon which the meteorites were found, and bibliographic information—all sorted by sample name. Meteorites were recovered from Dominion Range (DOM), MacAlpine Hills (MAC), Meteorite Hills (MET), Miller Range (MIL), Queen Alexandra Range (QUE), La Paz Ice Field (LAP), Pecora Escarpment (PCA), Roberts Massif (RBT), and Sandford Hills (SAN). The meteorites in Appendix 1 were published in *The Antarctic Meteorite Newsletter (AMN)* issues 27(2) (2004) and 28(1) (2005). Brief descriptions of meteorites other than equilibrated ordinary chondrites are published in *AMN*. Note meteorite pairings may be tentative.

Antarctic PNRA Meteorites
(98 meteorites)
Antarctica
Found 1991–2004
Table 3 reports classification of 90 of the 125 meteorite fragments recovered from the Frontier Mountain blue ice field (northern Victoria Land, Antarctica) by the Italian Programma Nazionale delle Ricerche in Antartide (PNRA) between 2003 December and 2004 January. Table 3 also lists 8 meteorites recovered from the same blue ice field by earlier PNRA/EUROMET expeditions which appeared in Grady (2000) with incomplete classification. Mineralogy and classification by A. Burroni and L. Folco *(MNA-SI)*, P. Rochette *(CEREGE)*, A. M. Fioretti and R. Carampin, *(UPad)*, M. Macrì, A. Maras and M. Serracino *(URoma)*. Specimens: Main mass, type specimens and thin sections, *MNA-SI*.

Antarctic CAS Meteorites
(51 meteorites)
Antarctica
Found 2002–2003
Table 4 reports classification of 50 meteorites collected in Grove Mountains by the Polar Research Institute of China, Shanghai. Classification: B. Miao, Y. Lin, R. Lu and D. Wang, *CAS*; H. Wang, Y. Liang, R. Wang, J. Ji, W. Zhang and X. Chen, *NU*. All type specimens and the remainder of the masses are at the Polar Research Institute of China, Shanghai.

Antarctic PSF Meteorites
(11 meteorites)
Antarctica
Found 2002
Table 5 reports classification of 11 meteorites collected on the blue ice at Pecora Escarpment by members of the Planetary Studies Foundation's Antarctica 2002 Expedition. Classification: P. Sipiera, *PSF*. Specimens: Main mass and type specimens, *DuPont*.

Benguerir ~32°15′N, 08°09′W
Morocco
Fell 2004 November 22, ~11:45 GMT
Ordinary chondrite (LL6)
A meteorite shower was witnessed to fall near Benguerir (~50 km due north of Marrakesh, Morocco) by local people on 2004 November 22, at ~11:45 GMT. The fall had an east-to-west trajectory. The estimated total recovered mass is ~25–30 kg. Three stones fell at the following localities: Douar Lfokra (32°13′52.9″N, 08°08′56.7″W), Ahl Fouim Sakhra Lourania (32°15′31.2″N, 08°10′51.9″W) and Douar Tnaja (32°15′43.1″N, 08°09′01.3″W). Two additional stones were also found further west, near Si Abdellah and Tnine Bouchane. A stone weighing ~4 kg, possibly recovered at Douar Tnaja, shows dull, black fusion crust and regmaglypts on one side, and it is presently held at the office of the Governor of the Kelaa Sraghna Province. Another stone weighing ~1.2 kg, possibly from Douar Lfokra, is kept in the laboratory of the Gendarmerie Royale. Mineralogy and classification (Hasnaa Chennaoui Aoudjehane, *UHAC*; Albert Jambon, *UPVI*; Michèle Bourot Denise, *MNHNP*): LL6, $Fa_{29\pm1}$ $Fs_{25\pm1}$, S3, W0. Specimens: type specimens, ~340 g, *UHAC* and 46 g, *NAU*; main mass, Oakes. Some other pieces are at *CNRST*.

Bukhara 39°46′47.2″N, 64°36′01.3″E
Uzbekistan
Fall 2001 July 9, 4.00 hrs (or July 8, 23.00 UT)
Carbonaceous chondrite (CV3)
One stone, weighing 5.3 kg, fell in a field, 15 km away from Bukhara city. A shepherd saw the fall and recovered the stone. Later his grandson learned about meteorites in school and remembered about the stone. He thought that it might be a meteorite and reported about the stone to the Ulugh Beg Astronomical Institute of the Uzbek Academy of Sciences. Shuhrat A. Ehgamberdiev of the Institute sent a sample of the meteorite to the Vernadsky Institute in 2004. Mineralogy and classification (M. A. Ivanova *Vernad*., F. Brandstätter *NHMV*). Fusion crust is well developed, dark grey. The meteorite consists of POP, PO, BO, and PP chondrules, chondrule fragments, CAIs, and matrix. Matrix/chondrule ratio is 0.6; chondrule sizes vary from 0.2 to 2 mm, 0.6 mm on average.

Chondrules of type I are most abundant. Minor phases are plagioclase, nepheline, jadeite, kamacite (Ni 5.4 wt%, Co 0.09 wt%), taenite (up to 47 wt% Ni), sulfides, mostly troilite. Olivine, $Fa_{0.9–60}$; Al_2O_3 0.2 wt%, Cr_2O_3 0.2 wt%, CaO 0.2 wt%, (mean values), pyroxenes are present as orthopyroxene, $Fs_{1–11}Wo_{0.6–3.6}$, Al_2O_3 up to 8 wt%, pigeonite, $Fs_{1.7–11}Wo_{5.2–11}$, Al_2O_3 up to 4 wt%; augite, $Fs_{1.4–9}Wo_{34–42}$, Al_2O_3 up to 12 wt%, and fassaite, $Fs_{0.3–1.5}Wo_{46–57}$, Al_2O_3 17 wt%, TiO_2 15 wt%. Petrological type 3; shock stage, S1; weathering grade, W1. Specimens: type specimen, 320.3 g, and a thin section, *Vernad*; main mass with Sh. A. Ehgamberdiev in the Ulugh Beg Astronomical Institute of the Uzbec Academy of Sciences, Uzbekistan.

Capot Rey **20°07.556′N, 10°12.336′E**
Niger
Found 2004 March
Ordinary chondrite (H5)
Many stony fragments totalling 38 kg were found by G. Moreau in the erg Capot-Rey, Ténéré du Tafassasset, Niger. The stones define an elliptical strewn field measuring 7 × 3.5 km, with a NE-SW major axis. The largest fragment weighs 2 kg. Mineralogy and classification: (E. Dransart, *EMTT*) Olivine: $Fa_{18.1}$; low-Ca pyroxene $Fs_{15.2}$; shock stage S2; weathering degree W1. Specimens: type specimen, 32.1 g, *MNHNP*, main mass with finder.

Cotopaxi **38°27.89′N, 105°42.09′W**
Femont County, Colorado, USA
Found 2000 October 8
Iron (ungrouped, IAB complex)
Richard and Sharon Walker found a single mass of 243 g while prospecting for gold samples on a forested hillside with a metal detector. The meteorite was buried about 20 cm deep in soil under a small tree and the mass was intergrown with the tree roots. Classification and analysis (J. Wasson, *UCLA*): Metal composition determined by INAA is: Ni = 9.8 wt%, Co = 0.50 wt%, Ga = 48 μm/g, As = 17 μg/g, Ir = 1.4 μg/g, Au = 1.7 μg/g. The composition is unique compared to all other known meteorites. Cotopaxi is an ungrouped member of the IAB complex. Type specimens, 21.43 g, *UCLA*; 20.33 g, *Denver*. Main mass (190 g), *Denver*.

Dar al Gani
Libya
(5 meteorites)
Table 1 reports classification of 5 meteorites found in the desert of Dar al Gani, Libya.

Dar al Gani 1040 **27°16.88′N, 16°24.50′E**
Libya
Found 2001 May 21
Carbonaceous chondrite (CV3)
Fifteen stones totalling 781 g were found 2001 May 21 by an anonymous finder in the desert of Dar al Gani. Classification and mineralogy (A. Greshake and M. Kurz, *MNB*): contains chondrules (mean diameter, 760 μm, abundance 25 vol%), CAIs, and mineral fragments set into a fine-grained matrix; olivine, $Fa_{19.6}$ (range 2.2–30.3), low-Ca pyroxene, $Fs_{1.8–7.2}Wo_{0.6–1.3}$; oxygen isotopes (I. A. Franchi and R. C. Greenwood, *OU*): $\delta^{17}O = –4.98‰$, $\delta^{18}O = –1.71‰$, and $\Delta^{17}O = –4.09‰$; low degree of shock; moderate degree of weathering. Specimens: main mass with anonymous finder; type specimen, 20.7 g *MNB*.

Dhofar Meteorites
Oman
(67 meteorites)
Table 6 reports classifications of 51 meteorites from the Dhofar region of Oman.

Dhofar 744—Correction
The find location for this sample is 19°15.6′N; 54°48.3′E

Dhofar 950 **19°19.5′N, 54°46.9′E**
Oman
Found 2003 November 11
Lunar meteorite (feldspathic impact melt breccia)
A grey stone weighing 21.7 g was found in the Dhofar region of Oman. Mineralogy and classification (M. Nazarov, *Vernad*., Th. Ntaflos, University of Vienna): fusion crust is absent. The meteorite is an impact melt breccia with mineral fragments and lithic clasts cemented by a glassy impact melt matrix. The lithic clast population includes mainly granulitic rocks of anorthositic, troctolitic, gabbro-noritic and gabbro-anorthositic compositions. The sample contains abundant veins of glass. Mineral compositions are as follows: feldspar, $An_{92–98}Or_{0–0.3}$; orthopyroxene, $Wo_{0.4–5}En_{55–91}$; clinopyroxene; $Wo_{5–44}En_{30–72}$; olivine, $Fo_{52–92}$ (Fe/Mn ≈ 85 at); accessory phases are Al-rich enstatite, Mg, Al-rich spinel, pleonaste, Al-rich chromite, ilmenite (1.1–8.5 wt% MgO), armalcolite, silica, troilite, and Fe-Ni metal (0.6–8 wt% Ni; 0.4–1.1 wt% Co). Matrix glass composition (wt%): SiO_2 43.9, TiO_2 0.05, Al_2O_3 33.1, FeO 1.08, MgO 1.77, CaO 18.6, Na_2O 0.37. The stone contains moderately weathered gypsum, celestite, and Fe hydroxides. The meteorite may be paired with Dho 302, 303, 305, 306, 307, 309, 310, 311, 730, 731 found nearby. Specimens: type specimens of 4.8 g and a thin section, *Vernad*. The main mass is held by an anonymous finder.

Dhofar 955 **19°03.27′N, 54°45.23′E**
Oman
Found 2003 February 6
Carbonaceous chondrite (CM2)
One fragment of an individual stone weighing 16 g was found on February 2003 in the Dhofar region of Oman. Mineralogy and classification (M. Ivanova, *Vernad*, F. Brandstätter, *NHMV*): fusion crust is dark brown, the meteorite consists of

altered POP, rare BO chondrules and their fragments, olivine aggregates sometimes with a halo around. Refractory inclusions consist of perovskite, spinel, and hydrously altered silicates. Olivine, $Fa_{0.5–35}$, CaO 0.24 wt%, Cr_2O_3 0.40 wt%. Pyroxene is rare, present as orthopyroxene, $Fs_{1.4–5.6}Wo_{0.8–2.4}$ and augite, $Fs_{2.0}Wo_{36.6}$. Minor phases are tochilinite, kamacite, pyrrhotite, pentlandite, Cr- and P-rich sulfides, chromite, escolaite, schreibersite, and Ca carbonates. The matrix is hydrously altered, and composed mainly of phyllosilicates and rare isolated grains of olivine and pyroxene. Weathering grade is W1. Shock stage is S1. Specimens: type specimen, 4.3 g, and one polished section, *Vernad*; main mass with anonymous finder.

Dhofar 960 **19°23.8′N, 54°33.5′E**

Oman
Found 2003 November 16
Lunar meteorite (feldspathic impact melt breccia)

A grey stone weighing 35.4 g was found in the Dhofar region of Oman. Mineralogy and classification (S. Demidova, *Vernad*., F. Brandstätter, *NHMV*): Fusion crust is absent. The meteorite is an impact melt breccia with abundant mineral fragments and lithic clasts set within a fine-grained impact melt matrix. The lithic clasts are impact melt breccias and granulitic rocks of anorthositic, gabbro-noritic, troctolitic, and noritic compositions. The presence of VLT mare basalt clasts, KREEPy and rare granitic fragments is a characteristic feature of the meteorite. Glass veins and fragments are common. Mineral compositions are as follows; plagioclase, $An_{57–98}Or_{0–6}$; orthopyroxene, $Wo_{3–5}En_{66–78}$; clinopyroxene; $Wo_{5–43}En_{0.4–73}$; olivine, $Fo_{4–90}$ (Fe/Mn ≈92 at); accessory minerals are ulvöspinel, Cr-rich ulvöspinel, Ti-rich chromite, Al-rich chromite, pleonaste, ilmenite (0.7–7.4 wt% MgO), silica, troilite, Fe-Ni metal (5–21 wt% Ni; 0.3–0.7 wt% Co); K-Ba feldspar, pyroxferroite, whitlockite, apatite, baddeleyite, Zr armalcolite and Zr-rich phases. The stone is moderately weathered; calcite, gypsum, celestite, smectite and Fe hydroxides are present. The meteorite was found close to Dho 925 and they are similar in texture, petrography and mineral chemistry. The stones may be paired. Specimens: type specimens of 7.4 g and 2 thin sections deposited at *Vernad*. The main mass is held by an anonymous finder.

Dhofar 961 **19°23.9′N, 54°33.8′E**

Oman
Found 2003 November 12
Lunar meteorite (feldspathic impact melt breccia)

A grey stone weighing 21.6 g was found nearby to the Dho 925 and 960 lunar meteorites in the Dhofar region of Oman. Mineralogy and classification (S. Demidova, *Vernad*, F. Brandstätter, *NHMV*): the meteorite is similar to Dho 925 and 960 in texture, mineralogy and mineral chemistry and the stones may be paired. Specimens: type specimens of 4.8 g and a thin section on deposit at *Vernad*. The main mass is held by an anonymous finder.

Dhofar 979 **19 45.4′N, 54 56.2′E**

Oman
Found 2004
Achondrite (ureilite)

A completely fresh, crusted stone of 1063 g was found by Michael Farmer in the Dhofar region of Oman on January 8, 2004. Description and classification (T. Bunch and J. Wittke, *NAU*): medium-grained typical ureilite with abundant very fine-grained, wormy graphite at grain boundaries and included within olivine and pigeonite. Olivine cores, $Fa_{16.5}$, FeO/MnO = 36 and rims, $Fa_{15.8}$; pyroxene, $Fs_{14.9}Wo_{5.0}$. Very little metal and terrestrial Fe oxides are present. Shock level, S1 and lightly weathered. Specimens: type specimen, 44.7 g, *NAU*: main mass, *Farmer*.

Dhofar 1222 **18°12.25′N, 54°03.40′E**

Oman
Found 2003
Primitive achondrite (acapulcoite)

A single stone, weighing 93 g, was found by Labenne. Classification and mineralogy (M. Bourot-Denise, *MNHNP*): has an equigranular texture with a mean grain size of about 200 μm. A few well-rounded chondrule relics are present. Olivine, $Fa_{6.8}$; pyroxene, $Fs_{8.1}$; wide patches of merrillite, large euhedral chromites; Fe-Ni metal contains schreibersite inclusions, troilite contains about 0.35 wt% Cr. Shock stage S2, weathering grade W2/3. Specimens: type specimen, 19 g, *MNHNP*; main mass with finders.

Dhofar 1224 **19°19.605′N, 54°46.507′E**

Oman
Found 2003 September 28
Lunar meteorite (feldspathic regolith breccia)

One 4.57 g stone, partly covered with fusion crust, was found by an anonymous prospector near the find locations of the lunar meteorites Dho 081/280/910 and Dho 302/908/1085 on a desert plateau near Wadi Quitbit, Dhofar, Oman. It was subsequently purchased by N. Classen. Classification and mineralogy (A. Irving and S. Kuehner, *UWS*): glass-rich, melt-matrix highland regolith breccia containing sparse, small mineral and lithic clasts. Minerals include exsolved pigeonite, augite ($Fs_{21.4}Wo_{38.3}$ to $Fs_{24.1}Wo_{35.0}$, FeO/MnO = 54.5–60.7), orthopyroxene ($Fs_{27.6}Wo_{9.4}$ to $Fs_{37.1}Wo_{3.0}$, FeO/MnO = 49.8–50.1), olivine ($Fa_{27.3–46.7}$, FeO/MnO = 80–105), anorthite ($An_{99.5–99.6}$), metal (10 wt% Ni and 40 wt% Ni), ilmenite, Ti-Al-bearing chromite and troilite. The largest lithic clast is a troctolite composed of olivine+anorthite+ilmenite. This specimen is probably paired to Dho 081, Dho 280 and Dho 910 found nearby. Specimens:

type specimen, 1.19 g, and one polished thin section, *UWS*; main mass, Classen.

Dhofar 1275 18°49.711′N, 54°38.374′E
Oman
Found 2003 February 6
Ordinary chondrite (L7)

One stone weighing 499 g was found on February 2003 in the Dhofar region of Oman. Mineralogy and classification (M. Ivanova, *Vernad*) fusion crust is dark brown, chondrules are not defined, matrix is coarse-grained. Olivine, $Fa_{24.8}$, orthopyroxene, $Fs_{21.1}Wo_{3.6}$ CaO >1.57 wt%. Plagioclase grains are up to 200 μm. Weathering grade is W4. Shock stage is S2. Specimens: type specimen, 59 g, and one polished section, *Vernad*; main mass with anonymous finder.

Fountain Hills 33.61°N, 111.72°W
Maricopa County, Arizona, USA
Found 2002 October 5
Carbonaceous chondrite (Bencubbin-like meteorite)

A single stone weighing 60 g was found by a hiker on a desert trail near his home in Fountain Hills, AZ. Classification and analysis (D. Lauretta, A. R. La Blue, *UAriz*; M. Killgore, *SML*): The stone is a CB carbonaceous chondrite, no obvious shock features, weathering grade W1. The meteorite contains abundant, large (diameter up to 4.3 mm), volatile-depleted, barred olivine, porphyritic, and granular chondrules, no fine-grained matrix, and ~25% modal abundance of metal, lower than for other Bencubbin-like meteorites. Metal occurs almost exclusively outside of chondrules. Olivine, $Fo_{96–98}$; low-Ca pyroxene, En_{96}, Fe/Mn = 23, 1.7–1.9 wt% CaO; plagioclase, An_{99}, 1.0 wt% MgO, 0.4 wt% FeO. Metal composition is 6.3–6.8 wt% Ni, 0.17–0.36 wt% Co, single grains are unzoned. No sulfides have been found. Oxygen isotopic composition: $\delta^{17}O = –1.45‰$, $\delta^{18}O = +1.28‰$. Nitrogen isotopic composition: $\delta^{15}N = +48‰$; see Lauretta et al. (2004), Blue et al. (2004). Specimens: type specimen, 12 g, *UAriz*; Main mass, *SML*.

Frontier Mountain 90200 72°57′20″S, 160°32′16″E
Antarctica
Found 1991 January 10
Achondrite (polymict ureilite)

A 3.19 g stony fragment was found by a PNRA/EUROMET team on the Frontier Mountain blue ice field. Mineralogy and classification (A. M. Fioretti and R. Carampin, *UPad*): FRO 90200 is a polymict ureilite breccia. Lithic fragments are <2 mm in size and appear oriented. Olivine in ureilite clasts ranges from Fo_{75} to Fo_{92} shows highly reduced rims (up to Fo_{94}) and have CaO = 0.35 wt% mean content. Low-Ca pyroxene ranges $Wo_{0.5–14}En_{54–94}$. Augite is only found as isolated crystals. Individual plagioclase crystals range from albitic ($Ab_{91.3}An_{0.3}Or_{8.4}$) to anorthitic ($Ab_{4.5}An_{95.5}$) composition. One igneous-textured clast consists of euhedral olivine ($Fo_{85–88}$, CaO 0.1 wt%), low-Ca pyroxene ($En_{68–71}$ $Wo_{13–8}$) and skeletal Ca-rich pyroxene in a feldspathic Fe-rich glass. Two very fine-grained dark clasts, about 2 mm in size, are similar to matrix of carbonaceous chondrites, containing both Mg-rich and Fe-rich hydrous minerals. Kamacite and troilite are present as minor phases in the breccia. Carbon-rich veins and pockets are common. Diamond, positively identified on the basis of its cathodoluminescence, constitutes abundant small grains only within carbonaceous areas. Graphite lamellae, generally deformed, are completely devoid of diamond. Shock deformation is high and varies in different clasts. Weathering is minor. Specimens: main mass, 2.82 g, one thin section, *MNA-SI*, one thin section, *OU*.

Frontier Mountain 90233 72°57′22″S, 160°26′18″E
Antarctica
Found 1991 January 10
Achondrite (monomict ureilite)

A 31.89 g stony fragment was found by a PNRA/EUROMET team on the Frontier Mountain blue ice field. Mineralogy and classification (A. M. Fioretti and R. Carampin, *UPad*): FRO 90233 is a relatively coarse-grained (grain size up to 2 mm) monomict ureilite composed of 76% olivine, 16% low-Ca pyroxene and 8% interstitial graphite. Olivine has Fo_{77} average core composition (range $Fo_{75.4–78.5}$) and $Fo_{90.5}$ reduced portions. Pyroxenes typically occur as mosaicized, turbid, twinned crystals with $En_{76}Wo_{4.7}$ composition. Graphite forms intergranular flakes up to 1 mm in size. The shock stage is S4. Weathering is minor. Specimens: main mass, 22.6 g, one thin section, *MNA-SI*; 8.79 g and one thin section, *OU*.

Frontier Mountain 93001 72°57′20″S, 160°29′29″E
Antarctica
Found 1994 January 4
Primitive achondrite (acapulcoite-lodranite)

This 4.84 g small stone is a fragment ~16 × 13 × 12 mm, angular, 20% fusion-crusted, found by a PNRA/EUROMET team. Mineralogy and classification (A. Burroni and L. Folco, *MNA-SI*): FRO 93001 is a medium-grained to coarse-grained, gabbroic rock consisting of (in order of abundance) orthoenstatite ($Fs_{13.3 \pm 0.4}Wo_{3.1 \pm 0.2}$), oligoclase ($Ab_{80.5 \pm 3.3}Or_{3.2 \pm 0.6}$), augite ($Fs_{6.1 \pm 0.7}Wo_{42.3 \pm 0.9}$) and traces of olivine ($Fa_{13.3 \pm 0.3}$; Mn/Mg = 0.006). Corroded xenoliths of probable lodranitic composition float in the gabbroic host lithology; they mainly include granoblastic olivine $Fo_{90.4 \pm 0.7}$ with average grain size of 400 μm, lesser Fe-Ni metal, and minor chromite (Cr/(Cr+Al) = 0.84; Fe/(Fe+Mg) = 0.64), phosphates, schreibersite, and troilite. The rock (including xenoliths) is devoid of shock features (S1) and nearly unweathered (W1). FRO 93001 is similar to the igneous lithology that intrudes an acapulcoite host in the Lewis Cliff (LEW) 86220 meteorite described by McCoy et al. (1997). Specimens: main mass, 2.57 g, two thin sections, *MNA-SI*; one thin section, *NHM*, type specimen, 1.60 g, *OU*.

Frontier Mountain 03005 72°57′18.5″S, 160°23′03.3″E
Antarctica
Found 2004 January 1
Enstatite chondrite (EL4)

A complete, fusion-crusted stone weighing 20.66 g was found by a PNRA team on the Frontier Mountain blue ice field. Mineralogy and classification (A. Burroni and L. Folco, *MNA-SI*): chondrules are readily delineated with mean diameter of 670 μm; enstatite is commonly monoclinic and has homogeneous composition $Fs_{0.8}Wo_{0.4}$; traces of olivine, $Fa_{0.1}$ are present. Opaque minerals include troilite, kamacite (Ni = 6.13, Si = 0.67 wt%), schreibersite and alabandite (Mn = 76.8, Fe = 20.1 and Mg = 3.05 wt%). Shock stage is S1, weathering grade is W1. Specimens: main mass and one thin section, *MNA-SI*.

Frontier Mountain 03022 72°57′03.2″S, 160°27′16.5″E
Antarctica
Found 2003 December 29
Achondrite (polymict ureilite)

A stony fragment weighing 2.47 g was found by a PNRA team on the Frontier Mountain blue ice field. Mineralogy and classification (A. M. Fioretti and R. Carampin, *UPad*): polymict ureilite breccia containing a wide variety of mineral and lithic clasts <2 mm in size. Typical ureilite clasts show equilibrated texture with triple junctions, inter-granular lamellae of graphite, and olivine cores ranging from Fo_{75} to Fo_{87} with highly reduced rims (up to Fo_{93}). Most isolated olivine crystals show the same compositional range. Low-Ca pyroxene in lithic clasts and isolated crystals shows a wide compositional range, $En_{67–99}Wo_{0.2–12}$. Rare augite is found as isolated crystals. Individual plagioclase crystals are mainly albitic, $Ab_{94.7}Or_{7.14}$. Interstitial glass has high SiO_2 content (up to 75 wt%). The breccia contains five very fine-grained dark clasts, up to 1.8 mm in size, similar carbonaceous chondrite matrix material. The clasts are almost opaque and contain both Mg-rich and Fe-rich, very fine-grained hydrous minerals. Opaque mineral include abundant troilite and minor kamacite, schreibersite. Shock varies in the different clasts up to shock stage S5. Weathering is minor, W1. Specimens, main mass, *MNA-SI*.

Grove Mountains (GRV) 73°05′S, 75°12′E
(51 meteorites)
Antarctica
Found 2002–2003

Table 4 summarizes classification of 51 of 4448 meteorites recovered from Grove Mountains, Antarctica, by the 19th Chinese Research Expedition (CHINARE) from 2002 December to 2003 February. Thirty-eight of these representative samples were analyzed by *CAS* (B. Miao, Y. Lin, R. Lu and D. Wang from Chinese Academy of Sciences), and the other 13 meteorites were determined by *NU* (H. Wang, Y. Liang, R. Wang, J. Ji, W. Zhang and X. Chen). The meteorites include 1 Martian meteorite, 1 pallasite, 3 ureilites, 7 carbonaceous chondrites, and 39 ordinary chondrites. Specimens: main mass, type specimens and thin sections at the Polar Research Institute of China (*PRIC*).

Grove Mountains 020005 73°05′51″S, 75°12′17″E
Antarctica
Found 2002
Carbonaceous chondrite (CM2)

The stone weighs only 0.38 g, and has an irregular shape, partially covered by brownish-black fusion crust. Classification and mineralogy (*NU*): Chondrules are small (0.1–0.5 mm in diameter), and less abundant than the opaque matrix (chondrule/matrix ratio of ~35/65). Aqueous alteration products are abundant. Accessory minerals are sulfide and metallic Fe-Ni (<1 vol%). A few Ca-Al-rich inclusions were found. Shock stage is S1; weathering grade is W1.

Grove Mountains 020015 73°07′17″S, 75°06′23″E
Antarctica
Found 2002
Carbonaceous chondrite (CK4)

The stone is a small (10.1 g), dark grey and friable fragment partially covered with a black fusion crust. Classification and mineralogy (*CAS*): There are abundant mineral fragments and several lithic clasts, with a few large chondrules (0.5–1.5 mm in diameter). The matrix (~60 vol%) is recrystallized (<10 μm); metal and sulfide are common (a total of ~5% vol%), as opaque nodules and tiny grains in chondrules and matrix. Olivine ($Fa_{30.2±0.4}$) and low-Ca pyroxene ($Fs_{20.7 ± 9.8}$) are FeO-rich. Shock stage, S1; weathering grade, W1.

Grove Mountains 020017 73°05′47″S, 75°11′03″E
Antarctica
Found 2002
Carbonaceous chondrite (CM2)

A black fragment (2.2 g) contains light grey chondrules and inclusions on the surface. Classification and mineralogy (*CAS*): Chondrules and fragments are small (50–300 μm in diameter), and less abundant than the opaque matrix. Several Ca-Al-rich inclusions and amoeboid olivine aggregates were found. Phyllosilicate is common in the matrix. Olivine ($Fa_{9.8 ± 13}$) and low-Ca pyroxene ($Fs_{2.0 ± 3.4}$) are highly heterogeneous, showing compositional zoning on backscattered electron images. Shock stage, S1; weathering grade, W1.

Grove Mountains 020025 73°04′39″S, 75°16′31″E
Antarctica
Found 2002
Carbonaceous chondrite (CM2)

A partially crusted fragment of 3.55 g was found. Classification and mineralogy (CAS): Chondrules are small (<500 μm, most 100–300 μm in diameter), and less abundant

(26 vol%) than the opaque matrix (~70 vol%). Other components are many mineral fragments, less abundant Ca-Al-rich inclusions and amoeboid olivine aggregates, and rare metallic Fe-Ni and sulfides. Phyllosilicates are very common. All Ca-Al-rich inclusions are strongly altered. Olivine ($Fa_{10.2 \pm 16}$) and low-Ca pyroxene ($Fs_{1.8 \pm 1.1}$) are highly heterogeneous. Shock stage, S1; weathering grade, W1.

Grove Mountains 020090 72°59′58″S, 75°15′40″E
Antarctica
Found 2003
Martian meteorite (lherzolite)

This stone weighs 7.54 g, and measures 24 mm × 22 mm × 20 mm in size. It has a nearly complete glossy fusion crust with clearly visible flow lines. Classification and mineralogy (*CAS*): It consists of poikilitic and interstitial parts. The poikilitic part is composed of several pyroxene oikocrysts, each having a pigeonite core and a thick augite rim and, enclosing several euhedral grains of olivine and chromite. The interstitial part consists of olivine and pigeonite and maskelynite, with accessory laths of merrillite coexisting with maskelynite. Magma inclusions occur mainly in olivine and a few exist in pyroxene oikocrysts. Mineral chemistry: olivine, $Fa_{30–40}$; pigeonite, $En_{60–72}Fs_{24–29}Wo_{3–14}$; augite, $En_{47–52}Fs_{16–19}Wo_{31–36}$; maskelynite, $An_{37–57}Ab_{41–58}Or_{1–6}$; MnO/FeO ratio of pyroxenes, 26.4. Shock stage, S5; weathering grade, W1. This meteorite is unlikely to be paired with GRV 99027, another Martian lherzolite found in the same region, based on their distinct petrographical and mineral chemical features.

Grove Mountains 020099 72°59′51″S, 75°12′15″E
Antarctica
Found 2003
Pallasite

This meteorite weighs 23.5 g, and has an irregular shape without any fusion crust. Large greenish crystals of olivine appear on the surface. Classification and mineralogy (*CAS*): It consists of metallic Fe-Ni and olivine in nearly equal proportions. The metal shows a Widmanstätten pattern with ~25 μm kamacite bandwidths. Olivine is 0.5–1.2 mm in size. Mineral chemistry: kamacite, 4.72–5.64 wt% Ni, 0.63–0.79 wt% Co; taenite, 9.19–48.7 wt% Ni, 0.18–0.68 wt% Co; olivine, $Fa_{11.2 \pm 0.1}$.

Grove Mountains 021512 72°56′06″S, 75°19′07″E
Antarctica
Found 2003
Achondrite (ureilite)

The 143.4 g meteorite is hemispherical in shape, and most of the surface is covered with black fusion crust. Classification and mineralogy (*CAS*): It consists mainly of subhedral to anhedral olivine (up to 1.0–3.5 mm in size) and a few grains of pigeonite embedded in carbonaceous matrix. Some grains of olivine have 120° triple junctions. Pigeonite ($En_{74.5 \pm 0.3}Wo_{8.0 \pm 0.2}Fs_{17.5 \pm 0.2}$) and olivine cores ($Fo_{79.6 \pm 0.2}$) are homogeneous. All grains of olivine have FeO-poor rims (Fa as low as 6.4 mol%), which contain abundant fine-grained inclusions of Ni-poor metal and sulfide. The carbonaceous matrix is composed of two distinct assemblages, i.e., most abundant fine-grained mixtures of forsterite, enstatite, Ni-poor metal and sulfides, and less abundant diamond-bearing graphite patches or veins. The presence of diamond was confirmed by Raman spectrum and CL analyses. Limonite veins are common. Shock stage, S2/S3; weathering grade, W3.

Grove Mountains 021579 72°57′55″S, 75°12′55″E
Antarctica
Found 2003
Carbonaceous chondrite (CO3)

The fragment weighs 6.57 g, with a few remains of fusion crust. Classification and mineralogy (*CAS*): Chondrules are small and have a bimodal size distribution, with one peak at 30–100 μm and the other at 350–600 μm in diameter. Modal abundance ratio of chondrule to opaque matrix is 1.2. Fe-Ni metal and sulfide are rare. Ca-Al-rich inclusions were found, and they are strongly altered. Silicates are highly heterogeneous: olivine, $Fa_{18.8 \pm 20}$; low-Ca pyroxene, $Fs_{7.0 \pm 12}$. Shock stage, S1; weathering grade, W1.

Grove Mountains 021710 72°47′25″S, 75°17′36″E
Antarctica
Found 2003
Carbonaceous chondrite (CR2)

This black stone weighs 442.6 g. It is heavily fractured, with a portion covered with fusion crust. Classification and mineralogy (*CAS*): There are abundant large (1–4 mm in diameter), multi-layered and metal-rich type I chondrules, and a few type II chondrules. A spinel-rich inclusion (380 × 680 μm in diameter) was found. Metallic Fe-Ni is abundant (5.9 vol%), and occurs predominantly inside chondrules. Silicates are FeO-poor: olivine, $Fa_{1.4 \pm 0.6}$, low-Ca pyroxene, $Fs_{2.1 \pm 0.6}$. Accessory phases are phyllosilicates, sulfides and magnetite. Shock stage, S1; weathering grade, W1.

Grove Mountains 021788 72°46′24″S, 75°19′20″E
Antarctica
Found 2003
Achondrite (ureilite)

This meteorite weighs 24.9 g, and is somewhat cone-shaped. The surface is partially covered with black fusion crust. Classification and mineralogy (*NU*): it consists mainly of coarse-grained (0.5–2.0 mm) silicates (~70 vol%) embedded in fine-grained carbonaceous matrix. Modal abundances: olivine 45 vol%, pyroxene 50 vol%, carbonaceous matrix <5 vol%. Pyroxene ($Fs_{22.6}$) and the core of olivine ($Fa_{22.3}$) are homogeneous. However, olivine is characterized by occurrence of reduced zones (~100 μm wide, $Fa_{1.5}$) along its

embayed boundaries and cracks. Abundant tiny metallic Fe (<1 vol%) is enclosed in the reduced zones and in the C-rich matrix. The coarse-grained olivines show triple junctions. Shock stage is S3; weathering grade is W3.

Grove Mountains 022459 72°46′26″S, 75°19′37″E
Antarctica
Found 2003
Carbonaceous chondrite (CV3)

This is a small (1.1 g) dark grey fragment, with a little remaining black fusion crust. White Ca-Al-rich inclusions and light grey amoeboid olivine aggregates (AOAs) appear on the broken surface. Mineralogy and classification (*CAS*): the sizes of chondrules range from 0.6–2.0 mm. Modal abundance ratio of chondrules plus amoeboid olivine aggregates to matrix is ~1. Olivine, $Fa_{7.0 \pm 5.5}$; low-Ca pyroxene, $Fs_{1.6 \pm 0.7}$. Metallic Fe-Ni is rare. Shock stage, S1; weathering degree, W1.

Grove Mountains 022931 72°46′28″S, 75°19′11″E
Antarctica
Found 2003
Achondrite (ureilite)

This is a fragment (1.24 g) without any fusion crust. Classification and mineralogy (*CAS*): the meteorite has a cataclastic porphyritic texture, consisting of coarse-grained olivine (19.1 vol%) and pigeonite (14.1 vol%) embedded in fine-grained carbonaceous matrix (66.3 vol%). The olivine grains have embayed boundaries, and show significantly reduced features with FeO-poor rims (Fa as low as 7 mol%). The reduced rims contain abundant tiny inclusions of Ni-poor metal and sulfides. The pigeonite ($En_{71.7 \pm 0.3}Wo_{10.4 \pm 0.2}Fs_{17.9 \pm 0.2}$) and the core of olivine ($Fa_{21.2 \pm 0.3}$) are rather homogeneous. The carbonaceous matrix consists predominantly of fine-grained mixtures of forsterite, enstatite, Ni-poor metal and sulfides, with a few diamond-bearing graphite patches. The occurrence of diamond in graphite patches was confirmed by the Raman spectrum and cathodoluminescence. The sample contains many veins of limonite, and appears dark brown in color. Weathering grade, W3; shock stage, S2/S3.

Isheyevo ~53°37′N, 56°20′E
Bashkortostan, Russia
Found 2003 October
Carbonaceous chondrite (Bencubbin-like meteorite)

One stone, weighing 16 kg, was found by a tractor driver in a field during harvest carrying in the Ishimbai region of Bashkortostan, close to the Isheyevo village. A small piece of the meteorite was issued to the Vernadsky Institute by Kazakov D.A. and Polozkov A.G. September 2004. Mineralogy and classification (Ivanova, *Vernad*, Ulianov, *MSU*): fusion crust is well developed, dark brown. The meteorite consists of Fe-Ni metal grains, C, POP, rare BO chondrules (0.02–1 mm in size), chondrule fragments, CAIs, and matrix lumps. Fe-Ni metal comprises from 50 to 70 vol%, and contains 4.2–8.4 wt% Ni, 0.2–0.5 wt% Co, and 0.03–0.6 wt% Cr; Co/Ni ratio is approximately solar. Chondrules do not contain any Fe-Ni metal grains, they are Mg-rich, and consist of pyroxene-rich cryptocrystalline material. Olivine, $Fa_{2.5}$, rare FeO-rich olivines, $Fa_{10–38}$; pyroxene, $Fs_{2.1}Wo_{1.7}$, FeO-rich pyroxene, $Fs_{8–12}Wo_{0.8–1.8}$; troilite is Cr-rich, 2.5 wt% Cr. INAA data for a 20 mg chip: 2.74 wt% Ni; 717 ppm Co; 2608 ppm Cr, 8.2 ppm Sc, and 1.59 ppm Ir. Petrological type 3; shock stage, S1; weathering grade, W1. Specimens: type specimen, 24.3 g, and two sections, *Vernad*; main mass with anonymous finder.

Jiddat al Harasis 054 19°37.82′N, 55°06.91′E
Oman
Found 2004 January 15
Achondrite (ureilite)

Fifty-two pieces of meteorite with total weight of 5079 g were found on January 2004 in the desert of Oman. Fusion crust is dark brown and partly preserved. Mineralogy and classification (C. Lorenz, *Vernad*; F. Brandstätter, *NHMV*): the rock has medium- to coarse-grained granular metamorphic texture. Few large inclusions of silicates are presented in the groundmass. Main phases are olivine (Fo_{86}; 0.2–0.7 wt% Cr_2O_3, 0.18 wt% CaO) and pigeonite $En_{83}Wo_5$ (0.9–1.2 wt% Cr_2O_3). Large grains of pyroxene contain of feldspathic glass inclusions ($Ab_{58}An_{40}$) and minor augite ($En_{59}Wo_{31}$). Accessories are chromite, Fe metal, Ni-Cr-rich troilite (3.9–6.7 wt% Ni; 6.7–7.3 wt% Cr) and Ni-poor troilite (0.7 wt% Ni; 4.1 wt% Cr). Troilite and orthopyroxene form the fine-grained intergrowth within olivine along thin fractures, filled by iron hydroxides with troilite relics. Aggregates, 100–800 μm in size, composed by graphite and diamond grains, occur between silicate grains. Total amount of carbon material is 2.8 vol%. Silicates have thin MgO-rich rims with tiny metal inclusions along the margins of graphite-diamond assemblies. Specimens: type specimen, 640 g, one thin and two polished sections, *Vernad*; main mass with anonymous finder.

Kalahari 008 20.9818°S, 22.9766°E
Kalahari, Botswana
Found 1999 September
Lunar meteorite (feldspathic regolith breccia)

A single stone of 598 g was found in September 1999 by an anonymous finder in front of a sand dune within the Kalahari desert. The rock is an anorthositic breccia having typical clasts of lunar highland breccias (e.g., feldspathic crystalline melt breccias, granulitic lithologies, cataclastic anorthosites, etc.) embedded within a well-lithified matrix. An impact melt spherule indicates that this rock derives from the regolith. The regolith origin is also supported by the finding of solar wind implanted rare gases (L. Schultz, *Mainz*). Classification and mineralogy (Anna Sokol and Addi Bischoff, *Mün*): olivine, $Fa_{63 \pm 18}$; pyroxene, $Fs_{42 \pm 10}$; plagioclase, $An_{85–98}$. The shock

stage of the rock is S4, the weathering grade is W1. Oxygen isotopic composition: $\delta^{18}O = +6.52‰$; $\delta^{17}O = +3.32‰$; $\Delta^{17}O = –0.07‰$ (R. N. Clayton, *UChi*); concentrations of selected elements (XRF or INAA; H. Palme, G. Weckwerth, *Köln*) in wt%: Al: 14.68; Si: 20.73; Mg: 2.68; Fe: 3.5; Ca: 11.1. Specimen: Type specimen, 20 g and polished thin section, *Mün*; main mass, anonymous finder.

Kalahari 009 **20.9818°S, 22.9766°E**

Kalahari, Botswana
Found 1999 September
Lunar meteorite (basaltic fragmental breccia)

A single stone of about 13.5 kg was found in September 1999 by an anonymous finder in front of a sand dune within the Kalahari desert, roughly 50 m apart from Kalahari 008. The rock is different from the Kalahari 008 anorthositic breccia. It has a heavily-brecciated texture and is basaltic in composition. The sample does not contain solar wind implanted rare gases (L. Schultz, *Mainz*). Classification and mineralogy (Anna Sokol and Addi Bischoff, *Mün*): olivine, $Fa_{50–99.9}$ (mostly $Fa_{80–95}$); pyroxene is highly variable ($Fs_{22–67}$ $En_{10–64}Wo_{6–41}$); plagioclase $An_{86–96}$ (very few plagioclase have more albitic composition, $An_{70–80}$). The shock stage of the rock is S4; the weathering grade is W1; however, calcite veins are present. Oxygen isotopic composition: $\delta^{18}O = +6.87‰$; $\delta^{17}O = +3.45‰$ (R. N. Clayton, *UChi*); concentrations of selected elements (XRF or INAA; H. Palme, G. Weckwerth, *Köln*; Münker, *Mün*) in wt%: Al: 6.76; Mg: 5.14; Fe: 12.47; Ca: 7.66. Zr/Hf = 30.2 and Nd/Ta= 17.4. Specimens: type specimen, 20 g and polished thin section, *Mün*; main mass, anonymous finder.

Kasauli **29°35′N, 77°35′E**

Uttar Pradesh, India
Fell 2003 November 2, 17:00 IST
Ordinary chondrite (H4)

A single stone weighing 16.82 kg accompanied by a thundering sound fell at Kasauli village, Muzaffarnagar district, Uttar Pradesh, India creating an oval shaped crater. The fall was witnessed by villagers of Kasauli. The meteorite was retrieved by the Geological Survey of India (GSI). The single mass of Kasauli meteorite is almost an oriented one and has a plano-convex turtle-back shape with a truncated ellipsoidal outline. The crust is greyish in color, netted in nature. A few visible chondrules are distinct on the surface. Minute shiny metallic knobs are observed on the surface of the meteorite. Classification (B. K. Chattopadhyay and A. P. Thapliyal, *GSI*): the meteorite is essentially composed of olivine, pyroxene, abundant Fe-Ni metal, troilite, and devitrified glass. Olivine occurs in higher abundance than pyroxene. A variety of well-defined chondrules of varying shape and sizes (from 0.1 mm to 0.6 mm) are present. The chondrule-matrix boundary is sharp. The matrix is fine-grained, recrystallized. Fa content in olivine varies between 17.7 and 23.8 (n = 6) with an average of 20.9. Fs content in opx varies from 8.5 to 31.5 (n = 7) with an average of 20. Shock stage, S2. Specimens: the single stone is at *GSI*, Kolkata.

Kidairat—Reclassification

This meteorite was first announced in *The Meteoritical Bulletin*, No. 70. Mineralogy and reclassification (Yassir A. Abdu, *Uppsala*): the meteorite is homogenous, highly recrystallized (plagioclase grain size 50–100 μm) suggesting it is an H6 chondrite, Fa_{19}, Fs_{16}.

Koltsovo **54°45.03′N, 36°58.68′E**

Kaluga district, Russia
Found 2004 July
Ordinary chondrite (H4)

One stone weighing 20.02 kg was found by Svetlana Murashova and Stanislav Murashov while collecting mushrooms 2 km SSW of the Koltsovo village. The stone was located at the edge of a ploughed field and was probably removed there during cultivation. No other meteorite fragments were found in the field by Dr. Andrei Stanyukovich of Moscow. Classification and mineralogy (M. Nazarov, *Vernad*): chondrules of different types and their fragments are well defined; olivine, $Fa_{20.0}$, PMD 2.7%; pyroxene shows variable composition, $Fs_{5–24}Wo_{0.2–7.2}$, the mean, $Fs_{12.9}Wo_{1.2}$; shock stage S1; weathering grade W1. Specimens: 2034 g and a thin section, *Vernad*; main mass with the finders.

Maigatari-Danduma **~12°50′N, ~9°23′E**

Niger-Nigeria border
Fell 2004 August 1, 12:30 L.T.
Ordinary chondrite (H5/6)

A meteorite broke into pieces and fell across the Niger-Nigeria border. One stone fell at the border town, Rigar Jobi in Maigatari Local Government Council, Nigeria. Mr. Malam Musa was standing in front of his hut when he heard a strange sound like the sound of a plane coming towards him. When he looked at the sky, he saw a black object falling towards him. The object fell about 15 m away from him. His son, standing under a tree about 30 m away, also saw the falling object and started running towards his father, but before he could reach him, the object had made it to Earth with a loud crash. Then there was another loud fall about 2–2.5 km away, in Danduma, a small village west-northwest of the town Adara on the Republic of Niger side, where two pieces of the meteorite, including the main mass, were recovered. Neighbors running to the site found a black stone that had shattered (or perhaps they broke it) into pieces. They brought some of the pieces to the local chief who presented them to the emir of Maigatari Local Government Council, Jigawa State, Nigeria. The total mass recovered was about 4.6 kg. Mineralogy and classification (F. Brandstätter, *NHMV*): H5/6 ($Fa_{20.3}$, Fs_{18}), S3, W0. Specimens: type specimen, 47 g, *NHMV*, main mass with anonymous purchaser.

Neuschwanstein—Additional Information

This meteorite fall was reported in *The Meteoritical Bulletin*, No. 87. Two further stones of this EL6 chondrite fall have been recovered; a 2840 g stone recovered in Tyrol, Austria approximately 1.5 km SE from the original fall, and a 1625 g piece found in Germany, approximately 1 km N of the original fall, at 10°48′29.4″E, 47°32′01.9″N. See Oberst et al. (2004) for details.

Northeast Africa 001

Sudan
Found 2002 April
Lunar meteorite (anorthositic regolith breccia)

A brownish-grey stone weighing 262 g was found by a prospector in northern Sudan near the Libya/Egypt/Sudan border in 2002 April. Fusion crust is absent, fresh surface is grey to dark grey, and terrestrial alteration products are present at the meteorite edges and in penetrating cracks and veins. Classification and mineralogy (J. Haloda and P. Tycova, *PCU*): a clast-rich anorthositic regolith breccia containing numerous mineral fragments and lithic clasts embedded in a well-consolidated microcrystalline impact melt matrix. Lithic clasts (up to 1 cm in size) are mainly of anorthositic lithologies; impact-melt breccias of anorthositic composition are abundant and show commonly breccia-in-breccia textures. Fragments of primary igneous rocks of anorthositic to gabbroic composition are common, containing plagioclase, $An_{95.1–97.2}$, low-Ca pyroxene, $En_{46–65}Wo_{2.1–5}$, high-Ca pyroxene, $En_{35–48}Wo_{37–44}$ and rare olivine, $Fo_{79.4}$. Sparse clasts of mare basalts (consisting of pigeonite plus anorthite plus accessory ilmenite), glass fragments, and spherules are present. Mineral fragments are of various composition: feldspar, $An_{92–99}$; orthopyroxene, $Wo_{2–4}En_{49–80}$; clinopyroxene, $Wo_{9–39}En_{50–87}$; olivine, $Fo_{48–82}$ (Fe/Mn 93–100 atom%); accessory minerals are Mg-Al spinel, chromite, ilmenite (2–5 wt% MgO), troilite, Fe-Ni metal and silica. Several pyroxene grains have marginal symplectitic intergrowths of fayalite plus hedenbergite plus silica after former pyroxferroite. Composition of the impact-melt matrix is (wt%): SiO_2 = 45.7, Al_2O_3 = 24.1, FeO = 7.2, MgO = 7.4, CaO = 14.6, Na_2O = 0.5, TiO_2 = 0.5. Secondary calcite, barite, gypsum and Fe hydroxides occur in cracks. Specimens: type specimen, 20 g, and one polished thin section, *PCU*; 5.8 g, and one polished thin section, *UWS*; 59.66 g, *ROM*; 60 g, *Hupé*; 9.7 g, *Gregory*; main mass with finder.

Northwest Africa

Morocco, Western Sahara and Algeria
(485 meteorites)

Table 7 lists classifications for 485 meteorites found at unknown locations in Northwest Africa.

Northwest Africa 1052

Morocco
Found 2001
Acapulcoite

A stone of 22 g was bought in Erfoud (Morocco) by Matteo Chinellato. Classification and mineralogy (G. Pratesi, V. Moggi-Cecchi, L. Mancini, *MSP*; G. Sighinolfi and S. Lugli, *UMo*): both thin section and type specimen sample look to be a fine-grained aggregate. In thin section it displays a granular texture with grains mainly of olivine, pyroxene, Fe-Ni alloy and troilite and ranging from 200 to 700 μm in dimensions. Olivine is homogeneous and has a typical forsteritic composition, ($Fa_{5.95}$); orthopyroxene $Fs_{7.6}Wo_{1.4}$. High Ca-pyroxene ($Fs_{3.6}En_{51.1}Wo_{45.3}$, Al = 1.44 mol%) and plagioclase ($An_{13.7}Ab_{79.9}Or_{6.4}$) are also common. Apart from silicates, major phases are metal and troilite. Accessory phases include Na and Ca merrillite and magnesiochromite (Cr/(Cr+Al) = 0.91; Fe:Mn:Mg ratios = 0.58:0.09:0.33). This meteorite shows a recrystallization texture with abundant 120° triple junctions and many interstices filled with metal. Based on texture (fine-grained), mineralogy, and chemistry (Cr content of diopside varying from 1.18 to 1.43 wt%), the meteorite is classified as an acapulcoite. Terrestrial weathering grade is rather low (W1); optical features (sharp extinction of olivine) indicate that the sample is very weakly or not shocked (S1). Specimens: main mass with buyer (Matteo Chinellato); type specimen (4.7 g) and thin section, *MSP*.

Northwest Africa 1054

Morocco
Found 2001
Acapulcoite

A stone of 86 g was bought in Erfoud (Morocco) by an anonymous dealer. Classification and mineralogy (G. Pratesi, V. Moggi-Cecchi, L. Mancini, *MSP*; G. Sighinolfi and S. Lugli, *UMo*): composed of a fine-grained aggregate. In thin section it displays a granular texture with grains mainly represented by olivine, pyroxene, Fe-Ni alloy and troilite and ranging from 200 to 700 μm in dimensions. Olivine is homogeneous and has a typical forsteritic composition, ($Fa_{6.37}$); orthopyroxene is bronzitic ($Fs_{7.77}Wo_{1.32}$). High-Ca pyroxene ($En_{51.23}Fs_{3.33}Wo_{45.44}$; Al = 1.50 mol%) and plagioclase ($An_{14.27}Ab_{79.47}Or_{6.25}$) are also common. Apart from silicates, major phases are metal and troilite. Accessory phases include Na merrillite and magnesiochromite (Cr/(Cr+Al) = 0.96; Fe:Mn:Mg ratios = 0.60:0.12:0.28). This meteorite shows a recrystallization texture with abundant 120° triple junctions and many interstices filled with metal. Based on texture (fine grained), mineralogy, and chemistry (Cr content of diopside varying from 1.17 to 1.35 wt%), the meteorite is classified as an acapulcoite. Terrestrial weathering grade is rather low (W1); optical features (sharp

extinction of olivine) indicate that the sample is very weakly or not shocked (S1). The meteorite may be paired with NWA 1052. Specimens: main mass with buyer; type specimen (17.9 g) and thin section, *MSP*.

Northwest Africa 1628

Northwest Africa
Found 2003
Carbonaceous chondrite (CK)

A 35.7 g stone was purchased in Rissani, Morocco in September 2003. Description and classification (T. Bunch and J. Wittke, *NAU*): partially shock-melted/crystallized CK (S3-6) of undeterminable petrologic grade. Cataclastic matrix consists of a massive network of small-grained olivine (Fa_{31}) with many micron-size magnetite inclusions (Cr_2O_3, 0.57 wt%; Al_2O_3, 3.1 wt%) and plagioclase ($An_{29.3}$). Several chondrules with thick, fine-grained rims, are mantled with quench-form alumina-rich (5.6 wt%) low-Ca pyroxene ($Fs_{23.2}En_{76.8}$) set in Ca-rich mesostasis. Many other chondrules also show characteristics of partial melting. Moderate weathering grade. Specimens: 7.8 g, *NAU*; main mass, *Oakes*.

Northwest Africa 1665

Northwest Africa
Found 2002
Carbonaceous chondrite (CK3 anomalous)

A single stone of 1185 g covered by fusion crust was found in 2002 by an anonymous finder in the western Saharan desert. Classification and mineralogy (A. Greshake and M. Kurz, *MNB*): it is a type 3 carbonaceous chondrite with chondrules, irregular shaped olivine-rich objects, and mineral fragments set into a fine-grained matrix of Fe-rich olivine, Ca pyroxene, troilite, and Fe-Ni metal; chondrules have a mean diameter of 130 μm and porphyritic olivine and pyroxene chondrules clearly dominate over radiating or cryptocrystalline types; matrix abundance is about 50 vol%; olivine, $Fa_{25.7}$ (the range is $Fa_{0.7–37.6}$); pyroxene, Fs_{12} (the range is $Fs_{2.5–48.3}$); oxygen isotopic compositions (R. Clayton and T. Mayeda, *UChi*): $\delta^{18}O = –1.03‰$, $\delta^{17}O = –4.95‰$ and (I. Franchi and R. C. Greenwood, *OU*): $\delta^{18}O = –1.88‰$, $\delta^{17}O = –5.43‰$, $\Delta^{17}O = –4.45‰$ are clear of the CO3 chondrite field and possibly located on an extension of the CK3 range; shock stage, S1; weathering grade, W2. Specimens: Main mass with anonymous finder; type specimen 22 g plus one polished thin section, *MNB*.

Northwest Africa 1839

Morocco
Found 2003
Ordinary chondrite (L7)

A 121.8 g, partially crusted stone was purchased in Rissani, Morocco in June 2003. Description and classification (T. Bunch and J. Wittke, *NAU*): the meteorite contains polygonal, equigranular (~1 mm grain size) crystals; no relict chondrules; prominent twinning in plagioclase. Mineral modes: orthopyroxene, 37 vol%; olivine, 35%; plagioclase, 12%; Ca-rich pyroxene, 6%; troilite, 4.5%; metal (taenite only), 3.5%; chromite, 2%. Very homogeneous; silicate compositional range is within the analytical precision of ±0.2 mol%. Orthopyroxene, $Fs_{19.1}Wo_{1.3}$, Fe/Mn = 41; olivine, $Fa_{22.0}$, Fe/Mn = 63 plagioclase, $An_{53.4}Or_{2.2}$; clinopyroxene, $Fs_{7.2}Wo_{47}$; taenite, Ni = 16.7 wt%; chromite, Cr/(Cr+Al) = 0.73. Shock level, S1; weathering grade is W2. Specimens: 20.1 g, *NAU*; main mass, *Oakes*.

Northwest Africa 1840

Morocco
Found 2003
Enstatite achondrite (ungrouped)

A 132.8 g complete and partially crusted stone was purchased in Erfoud, Morocco in August 2003. Description and classification (T. Bunch and J. Wittke, *NAU*): the meteorite has an igneous texture; it is a brecciated enstatite orthopyroxenite with a series of prominent, parallel compression fractures (0.1 to 0.8 mm spacing) that span the entire sample. These fractures acted as conduits for weathering; most weathering effects are limited to areas that border these fractures. Mineral modes: enstatite, 92 vol%; Si-bearing metal, 4%; plagioclase (maskelynite), 2%; high-Cr troilite, 2%; graphite, <1%. Enstatite, FeO = 0.03 to 0.64 wt%; CaO = 0.06 to 0.38 wt%.; Cr-rich troilite, Cr = 10.2 to 14.7 wt% with Mn <1.15% and Ti <1.76 wt%. The largest metal grains (0.6–1.0 mm in diameter) have graphite inclusions <0.1 mm in size; metal, Ni = 6.5 wt% (range = 6.2–6.9), Si = 1.25 wt% (range = 0.9–1.81); plagioclase, An_{42}. None of the exotic sulfides common to aubrites and enstatite chondrites were found. Shock level, S4 (parallel fractures, reduced birefringence, and mottled extinction in enstatite; all plagioclase is maskelynite); weathering grade is W2/3. Specimens: type specimen, 21.1 g, *NAU*; main mass, *Oakes*.

Northwest Africa 2042

Morocco
Purchased 2003 October
Mesosiderite

An uncrusted stony-iron meteorite (700 g) with a brown, weathered surface was purchased in Erfoud by a Moroccan dealer for D. Gregory (*Gregory*) in 2003 October. Classification and mineralogy (A. Irving and S. Kuehner, *UWS*): subequal amounts of metal and silicates in a coarse-grained plutonic igneous texture. The metal has rounded grains of taenite (30 wt% Ni) within dominant kamacite (5 wt% Ni). The remainder of the sample consists mainly of orthopyroxene ($Fs_{26.1}Wo_{2.1}$ to $Fs_{25.7}Wo_{3.9}$; FeO/MnO = 17.8–20.3) and anorthitic plagioclase ($An_{95.8}$) with accessory chromite, troilite, and a silica polymorph. This sample appears to be paired with NWA 1817 and NWA 1878 (see

Bunch et al. 2004). Specimens: type specimen, 20 g, *UWS*; main mass, *Gregory.*

Northwest Africa 2085
Morocco
Found 2003 October
Ordinary chondrite (L melt rock)

A 2.7 kg single stone was purchased in Rissani, Morocco. Description and classification (T. Bunch and J. Wittke, *NAU*): exceptional melt rock: cm-size L chondrite clasts are surrounded by crystallized melt. The melt contains oblate to round, eutectic-textured, masses (up to 2.5 mm) of taenite metal set in troilite. The metal/troilite complexes show strong flow alignment in a matrix of tabular to equant olivine (<0.8 mm), which has no apparent preferred orientation, and SiO_2-rich glass, in addition to small, recrystallized chondrite fragments. Melt olivine, $Fa_{22.8}$ (range $Fa_{22.1–23.8}$); taenite, Ni = 15.4 wt%, range, 13.6–16.1 wt%; troilite, Ni = 0.42 wt%; glass, SiO_2 = 74.6 wt%, FeO = 3.6 wt%. Clast chondrules and matrix are partially recrystallized from shock effects; olivine, $Fa_{22.2–23.9}$; orthopyroxene, $Fs_{18–19.9}Wo_{1.4–2.0}$. Shock level, S4 to S6; weathering grade, W1/2. Specimens: type specimen 88.5 g, and one thin section, *NAU*; main mass, *Farmer.*

Northwest Africa 2251 **27°58′N, 7°57′W**
Found 2001 October
Achondrite (howardite)

A fusion-crusted stone of 17 g was found by nomads on October 2001 near Tindouf (western Algeria). Mineralogy and classification (A. Seddiki, *UO/UJM*; B. Moine, J. Y. Cottin, *UJM*; V. Sautter, J. P. Lorand, M. Denise, *MNHNP*): Cumulate eucritic and diogenitic clasts in a clastic matrix. Eucrite clasts contain plagioclase An_{90} (range $An_{88–92}$), pigeonite ($Fs_{43–53}Wo_{6–20}$) with exsolved augite ($Fs_{37}Wo_{25}$). Minor minerals are a silica phase, troilite, Ti chromite (TiO_2 = 1.65 wt%) and ilmenite. Diogenite clasts are composed by orthopyroxene ($Fs_{32–36}Wo_{2–4}$) with augite exsolution lamellae ($Fs_{42}Wo_{46}$), chromite, troilite, and ilmenite. The Fe/Mn atomic ratio in pyroxenes ranges from 24 to 30. Eucritic clasts comprise <60 vol% of the rock. The analyses of the glass in the fusion crust corresponds to the bulk compositions of howardites. The oxygen isotopic composition ($\delta^{18}O$ = +5.2‰, $\delta^{17}O$ = +2.3‰, $\Delta^{17}O$ = –0.4‰) confirms that this rock belongs to the HED suite, although the $\Delta^{17}O$ is slightly lower than the HED grand mean. Specimens: main mass 16 g, *MNHNP*, thin section, *UJM*.

Northwest Africa 2269 **27°55′N, 7°50′W**
Found 2002 March
Carbonaceous chondrite (CV3)

The meteorite, found by nomads near Tindouf (southwest Algeria), weighs 184 g, and is completely covered by a fusion crust. Mineralogy and the classification (A. Seddiki, *UO/UJM*, B. Moine, J. Y. Cottin, *UJM*; M. Denise, *MNHNP*). Chondrules are less than 2 mm in diameter and are poorly abundant (<20%). CAIs (anorthite, spinel, and melilite) are different sizes and up to 1 cm. The fine-grained matrix is very abundant. Chondrules consist of non-equilibrated porphyric olivine ($Fa_{0.7–28}$), or opx ($Fs_{0.91}$), glass, magnetite, pentlandite and a few rare spherules of iron metal in the olivine crystals. Anorthite occurs in the center part of some opx chondrules ($An_{85}Ab_{16}$), associated with fassaite ($Fs_{08}Wo_{44}$) and hedenbergite ($Fs_{42}Wo_{50}$). In the matrix the olivine is $Fa_{55–91}$. Specimens: type specimen, 23.6 g, *MNHNP*; plus 4 g and thin sections, *UJM*, main mass with finders.

Northwest Africa 2286
Northwest Africa
Purchased 2003
Achondrite (olivine-rich diogenite)

A single stone of 82 g was found 2003 by an anonymous finder in the western Sahara and purchased in 2003 in Morocco. Classification and mineralogy (A. Greshake, *MNB*): dominated by large blocky orthopyroxene crystals and ~20% large olivine phenocrysts; minor phases include FeS, and Fe-Al-Cr-spinel; orthopyroxene, $Fs_{21.9}Wo_{1.5}$, olivine, $Fa_{26.8}$; low degree of shock; moderately to strongly weathered and very friable; most likely paired with NWA 1877. Specimens: main mass with anonymous finder; type specimen 23.5 g plus one polished thin section, *MNB*.

Northwest Africa 2289
Northwest Africa
Purchased 2003
Rumuruti chondrite (R3–6)

A single stone of 46.5 g was found in 2003 by an anonymous finder in Western Sahara. Classification and mineralogy (A. Greshake, *MNB*): a brecciated type 3–6 Rumuruti chondrite; olivine, $Fa_{13.5–40.5}$; low-Ca pyroxene, $Fs_{3.7–29.1}Wo_{0.2–4.3}$; augite, $Fs_{10.5}Wo_{47.2}$; plagioclase, $An_{8.8–22}$; low degree of shock; low to moderately weathered. Specimens: main mass with anonymous finder; type specimen 10.2 g plus one polished thin section, *MNB*.

Northwest Africa 2353
Northwest Africa
Purchased 2004
Achondrite (ungrouped)

A stone of 580 g was purchased in Erfoud, Morocco. Description and classification (T. Bunch and J. Wittke, *NAU*): completely recrystallized into polygonal and subhedral grains; H-group chondrite affinities, but with different oxygen isotopes, no relict chondrules; grain size <0.5 mm, mean = 0.2 mm; intensely fractured with abundance of subparallel compression fractures. Olivine and pyroxene analyses are within the precision of the electron microprobe. Olivine, $Fa_{17.9}$, FeO/MnO = 34; NiO = 0.35 ± 0.12 wt%; orthopyroxene, $Fs_{15.6}Wo_{3.1}$, FeO/MnO = 19; plagioclase,

$An_{13.1}Or_{2.6}$; chromite, cr# = 87; FeS, Ni = 1.65 wt%; metal (taenite only), Ni = 21.6 wt%; trace amount of merrillite; magnetite: NiO = 0.27 ± 0.10 wt%. Oxygen isotope replicate analyses (T. Larson and F. Longstaffe, *UWO*) of acid-washed, bulk sample by laser fluorination gave $\delta^{17}O$ = +3.16‰, +3.3‰, $\delta^{18}O$ = +5.10‰, +5.51‰, and $\Delta^{17}O$ = +0.44‰, +0.51‰. Weathering grade, W3 and lightly shocked (S2). Specimens: type specimen, 20.1 g *NAU*; main mass, *Regelman*.

Northwest Africa 2372

Northwest Africa
Found 2004
Carbonaceous chondrite (CK4)

A 440 g single, brownish stone was purchased in Erfoud, Morocco in May 2004. Description and classification (T. Bunch and J. Wittke, *NAU*): contains ~33 vol% chondrules that are typically smaller than most CK meteorites (<1 mm in diameter), abundant melilite-spinel CAIs rimmed by subcalcic augite, and partially recrystallized matrix. Matrix olivine, $Fa_{29.5–34.2}$, FeO/MnO = 30.8–37.8 NiO = 0.35 ± 0.12%; low-Ca pyroxene, $Fs_{25.3–29.0}Wo_{0.9–5.3}$, FeO/MnO = 25.3–29.0; plagioclase, $An_{36.8–51.2}Or_{1.7–3.0}$; magnetite, Cr_2O_3, = 5.3 wt%, Al_2O_3, 5.3 wt%, TiO_2 = 1.97 wt%, NiO= 0.27 ± 0.1%, troilite, and Fe-, Mg-rich feldspathic glass. A portion of the glass has been replaced by terrestrial carbonate. Shock level is S2, weathering grade, W3. Specimens: type specimen, 23 g *NAU*; main mass, *Reed*.

Northwest Africa 2373

Northwest Africa
Purchased 2004 August
Martian meteorite (olivine-phyric shergottite)

Several small stones that weigh 18.1 g were purchased in Erfoud Morocco. They are yellow brown with desert ablation/varnish surface only, no fusion crust. Description and classification (T. Bunch and J. Wittke, *NAU*): olivine phenocrysts (<1.25 mm in longest dimension) set in a fine-grained groundmass (<0.1 mm) of pigeonite, maskelynite, chromite, Ti magnetite, augite, chlorapatite and sulfide. Olivine has cores of $Fa_{30.7}$ (FeO/MnO = 51.9), rims of $Fa_{50.3}$ (FeO/MnO = 53.3) and contain micron to submicron inclusions of chromite, glass, and barite. One large olivine grain, which may be a xenocryst, is different from the rest with a core of $Fa_{29.1}$ (FeO/MnO = 43) and more abundant tiny inclusions. The wide (0.2 to 0.4 mm), inclusion-free mantle on this grain is $Fa_{32.3}$ (FeO/MnO = 39.2). Pigeonite is zoned from $Fs_{29.4}Wo_{8.4}$ to $Fs_{36.4}Wo_{14.1}$ (FeO/MnO = 28); augite is $Fs_{21.8}Wo_{29.1}$. Maskelynite is slightly zoned with a compositional average of $An_{52.1}Or_{2.1}$. Chromite, cr# = 87, fe# = 90.4. Overall texture, mineral content and mineral compositions strongly suggest that this stone is paired with NWA 1068. The specimen is lightly weathered and moderately shocked. Specimens: type specimen, 3.7 g and one thin section, *NAU*; main mass, *Birdsell*.

Northwest Africa 2379

Northwest Africa
Purchased 2004 August
Achondrite (howardite)

A 68 g stone with fusion crust was purchased in Erfoud, Morocco. Description and classification (T. Bunch and J. Wittke, *NAU*): an unusual howardite that contains an array of plastically deformed shocked eucrite and diogenite clasts. Shock characteristics range from crushed cataclastics (S2–4), maskelynite-bearing (S4), recrystallized pyroxenes and plagioclase (S5) to melt clasts (S6) that contain olivine as the quenched mafic phase in place of typical pyroxenes. Diogenites: orthopyroxene, $Fs_{25.0}Wo_{2.9}$ (FeO/MnO = 29.4); plagioclase, $An_{88.8}$; chromite, cr# = 76, mg# = 24. Eucrites: orthopyroxene, $Fs_{47.8–61.4}Wo_{1.4–2.3}$ (FeO/MnO = 31.2–36); pigeonite, $Fs_{51.3–56.8}Wo_{7.7–12.6}$; augite, $Fs_{27}Wo_{28.1}$; plagioclase, $An_{86.4–91.1}$. Quench olivine (<0.05 mm in diameter): cores, $Fa_{17.9}$; rims, $Fa_{36.4}$ (FeO/MnO = 41–47); low weathering grade. Specimens: type specimen, 13 g, *NAU*; main mass, *G. Hupé*.

Northwest Africa 2381

Northwest Africa
Purchased 2004 August
Ordinary chondrite (LL melt breccia)

A 132 g complete and crusted stone was purchased in Erfoud, Morocco. Description and classification (T. Bunch and J. Wittke, *NAU*): highly shocked (melted and brecciated) LL chondrite (S2–6). Contains sparse marble-shaped (0.8–1.4 mm) LL7 clasts that show equigranular, recrystallized texture with abundant 120° triple grain junctions. Olivine, $Fa_{31.8}$ (FeO/MnO = 63); orthopyroxene, $Fs_{25.1}Wo_{1.8}$; chromite, cr# = 86, Fe# = 92. Clasts are enclosed by a thick mantle (up to 5 mm) of LL chondrite, similar in composition, but without recrystallization (shock level = S3). These mantles are surrounded by highly shocked LL materials that range from complete melt with quench products of olivine, Ca pyroxenes, and feldspathic glasses (S6) to intense, shock darkened LL clasts (metal melt with injection and maskelynite, S4). Weathering grade is W2. Specimens: type specimen 21 g *NAU*; main mass, *G. Hupé*.

Northwest Africa 2386

Northwest Africa
Purchased 2004 September
Carbonaceous chondrite (CK4)

A 440 g single stone with weathered crust was purchased in Erfoud, Morocco. Description and classification (J. Wittke and T. Bunch, *NAU*): contains ~42 vol% small chondrules with ~13 vol% CAI components dominated by melilite-spinel aggregates, rimmed by diopside or subcalcic augite. Chondrules have well-defined rims and mostly crystallized mesostasis. Matrix is partially recrystallized with minor Fe-, Mg-rich feldspathic glasses. Olivine is fine-grained and poorly crystallized. Matrix olivine, $Fa_{29.5–34.8}$ (FeO/MnO =

31–37); low-Ca pyroxene, $Fs_{25.3–29.0}Wo_{0.9–5.3}$ (FeO/MnO = 25.3–29.0); plagioclase, $An_{41.0–51.2}Or_{2.1–2.9}$; magnetite, Cr_2O_3 = 5.3 wt%, Al_2O_3 = 1.86 wt%, TiO_2 = 1.97 wt% and NiO = 0.31 wt%. Moderately weathered and lightly shocked (S2). Specimens: type specimen, 22 g *NAU*; main mass, *Reed*.

Northwest Africa 2388

Northwest Africa
Purchased 2004 September
Carbonaceous chondrite (CK6)

An 81 g fresh and fully crusted stone was purchased in Erfoud, Morocco. Description and classification (T. Bunch and J. Wittke, *NAU*): fully equilibrated and recrystallized with a few indistinct, relict chondrules. Abundant plagioclase forms a discontinuous network around enclaves of olivine, Ca pyroxene, and magnetite matrix and around relict chondrules. Olivine in matrix and chondrules is very homogeneous, $Fa_{31.9–32.6}$ (N = 26) and very low MnO contents (FeO/MnO = 113–137); Ca pyroxene, $Fs_{20.5}Wo_{50.5}$ (FeO/MnO = 98–118); plagioclase, $An_{85.9}Or_{7.4}$. All silicates contain NiO: olivine, 0.62–0.82 wt%, Ca pyroxene, 0.78–1.09 wt%, plagioclase, 0.41–0.49 wt%. Magnetite, Cr_2O_3 = 5.3 wt%, Al_2O_3 = 2.36 wt%, NiO = 0.51 wt%. Moderately weathered and low shock level. Specimens: type specimen, 16.2 g *NAU*; main mass, *Reed*.

Northwest Africa 2400

Morocco or Algeria
Purchased 2003 April
Achondrite (ungrouped)

A 137 g light tan to rusty-brown, fully crusted stone was purchased in Rissani, Morocco in April 2003. Description and classification (T. Bunch and J. Wittke, *NAU*; A. Irving and S. Kuehner, *UWS*): composed mainly of approximately mm-sized, randomly oriented pigeonite ($Fs_{64–64.8}Wo_{5.6–6.4}$) with very fine, parallel exsolution lamellae of augite ($Fs_{38–49.1}Wo_{36.7–23}$), and interstitial, recrystallized plagioclase (<0.10 mm in size, ~$An_{86}Or_{0.5}$) with prominent triple junctions, and rare, unrecrystallized, tabular plagioclase relicts (<1 mm, zoned from An_{80} to An_{89}). FeO/MnO ratios for all pyroxenes range from 59.5 to 68.7 (avg. 64.7). Only small amounts of pyroxene are present in the recrystallized zones. Accessory minerals occurring predominantly in the recrystallized plagioclase zones include a silica polymorph, chromite [Cr/(Cr + Al) = 83, Fe/(Fe + Mg) = 67], ilmenite (53.5 wt% TiO_2, 43.6 wt% FeO; with small baddeleyite inclusions), merrillite (some with minor amounts of Na_2O, MgO, and FeO), Zn-bearing troilite, pentlandite, Cr ulvöspinel and altered Fe metal (associated with minor troilite, barite, and calcite). Shock damage is not apparent and, with the exception of the oxidation of minor metal, weathering effects are very low. Oxygen isotopes (D. Rumble, *CIW*): replicate analyses by laser fluorination gave $\delta^{17}O$ = –0.15 0.1‰, $\delta^{18}O$ = +3.27 0.2‰, $\Delta^{17}O$ = –1.57 ± 0.03‰. In its texture, mineral mode, mineral compositions, and oxygen isotope composition NWA 2400 is nearly identical to the anomalous achondrite NWA 011 (Yamaguchi et al. 2002; Promprated et al. 2003), which strongly indicates that these two stones are paired. Specimens: type specimen 20.2 g and three polished thin sections, *NAU*; main mass, anonymous purchaser.

Northwest Africa 2428

Northwest Africa
Found 2004
Iron (IAB)

A single mass with a total weight of 1650 g was purchased in Erfoud, Morocco in July, 2004. Description and classification (John Wasson, *UCLA*): NWA 2428 is a plessitic octahedrite that has suffered some post-shock recrystallization. It is dominated by long (~2 cm) schreibersite lamellae that are surrounded by swathing kamacite ~0.6 mm thick (Fig. 1). Shock has caused fractures near most of the schreibersite lamellae. Weathering is minor. Cr 22 μg/g, Co 5.58 mg/g, Ni 117.7 mg/g, Cu 200 μg/g, Ga 16.8 μg/g, As 28.3 μg/g, Sb 180 ng/g, W 0.17 μg/g, Ir 1.09 μg/g, Au 2.646 μg/g. Based on these data, the meteorite can be classified as a IAB, subclass HL, iron (Wasson et al. 2002). Specimens: type specimen, 55 g *UCLA*, main mass, *Birdsell*.

Northwest Africa 2434

Northwest Africa
Purchased 2004
Achondrite (diogenite, metal-rich)

A 441 g partially crusted stone was purchased in Erfoud, Morocco. Description and classification (J. Wittke and T. Bunch, *NAU*): highly brecciated, metal-rich diogenite with orthopyroxene fragments up to 11 mm in size and scattered recrystallized pockets. Modal content in vol%: orthopyroxene, 86.2; metal, 7.3 (heterogeneously distributed, 4.3 to 13.2 vol%); plagioclase, 5.5, phosphate, sulfide and chromite <2. Orthopyroxene, $Fs_{24.2}Wo_{1.3}$ (FeO/MnO = 32.7); Ca-rich pyroxene, $Fs_8Wo_{46.9}$; plagioclase, $An_{95.7}$; chromite, cr# = 69; metal, Ni = 6.5 wt%. Very fresh; shock level, S2. Specimens: type specimen, 27.6 g *NAU*; main mass, *Hall*.

Northwest Africa 2480

Northwest Africa
Found 2004
Achondrite (howardite)

A single stone of 4.1 g almost completely covered with fusion crust was found spring 2004 by an anonymous finder in the Sahara and purchased March 2004 in Rissani. Classification and mineralogy (A. Greshake, *MNB*): polymict breccia with basaltic eucrite and diogenitic clasts are set into a more fine-grained clastic matrix; dark impact melt fragments are rare; eucrite clasts contain plagioclase, $An_{92.9}$ (range $An_{87.9–96.8}$) and pigeonite, $Fs_{25.8}Wo_{8.7}$; minor phases include Al-Ti chromite and troilite; diogenite clasts are composed mainly of

orthopyroxene, $Fs_{26.9–31.9}Wo_{2.4–3.9}$; high degree of shock; low degree of weathering. Specimens: type specimen 1.15 g plus one polished thin sections *MNB*.

Northwest Africa 2519
Algerian-Moroccan border
Found 2004
Carbonaceous chondrite (CK4)

One completely crusted stone weighing 44.5 g was purchased in Erfoud in September 2004. Classification and mineralogy (M. Bourot-Denise, *MNHNP*): clear chondritic texture, with large chondrules (~500 μm) and large opaque nodules of associated pentlandite and magnetite with minor pyrrhotite. Silicates are generally very fissured and blackened by fine magnetite blebs. Their composition is very homogeneous; olivine $Fa_{31.3 \pm 0.4}$, 0.5 wt% NiO; pyroxene $Fs_{27.0 \pm 1.1}Wo_{1.6 \pm 2.0}$; clinopyroxene $Fs_{9.1}Wo_{46.9}$; plagioclase An_{22} to An_{47}, 0.13 wt% NiO. Magnetite is Cr-rich, 4.3 wt% Cr_2O_3, 0.6 wt% NiO, 0.3 wt% TiO. Estimated shock stage S3, weathering grade W2 (sulfide altered); magnetic susceptibility 4.61 (J. Gattacceca, *CEREGE*). Specimens: type specimen 9.4 g and one polished mount, *MNHNP*; main mass, *Thomas*.

Northwest Africa 2520
Algeria
Found 2004
Ordinary chondrite (LL3)

One partially crusted stone, weighing 75.5 g, was purchased in Erfoud in September 2004. Classification and mineralogy (M. Bourot-Denise, *MNHNP*): brecciated; major part has abundant, large chondrules (>500 μm), with entirely devitrified mesostasis (diopside and plagioclase, $An_{12.3}$); several more or less melted clasts, in which the chondritic texture has been erased and opaques make up pervasive fine blebs in silicates. Olivine, $Fa_{0.9–32.3}$, mean $Fa_{25.0 \pm 7.7}$, FeO-poor chondrule olivines are zoned; pyroxene, $Fs_{3.5–33.7}$, mean $Fs_{18.2 \pm 8.9}$. Magnetic susceptibility 3.66 (J. Gattacceca, *CEREGE*). Estimated subtype 3.6–3.7 (from FeO zoning in olivine); estimated shock stage S4/S5; weathering grade W4 (metal and sulfide much altered). Specimens: type specimen 15.8 g and one polished mount, *MNHNP*; main mass, *Thomas*.

Northwest Africa 2625
Northwest Africa
Purchased 2004 August
Achondrite (ureilite)

A 305 g single stone was purchased in Erfoud, Morocco. Description and classification (J. Wittke and T. Bunch, *NAU*): medium- to coarse-grained (<4 mm), typical ureilite with pronounced preferred orientation of silicates, which are mostly elongated with curvilinear morphology. Pigeonite shows well-defined twinning; graphite and carbonaceous-metal-silicate masses tend to cross trend the lineation direction with some small masses poikilitically enclosed by large pigeonite. The degree of olivine-pigeonite reduction is low to moderate. Olivine cores, $Fa_{20.3}$ (Cr_2O_3 = 0.72 wt%), rims are $Fa_{8–10.8}$ (Cr_2O_3 = 0.53 wt%); pigeonite, $Fs_{17.4}Wo_{7.6}$ (Cr_2O_3 up to 1.56 wt%). Weathering is low grade and the shock level is S2. Specimens: type specimen, 22.2 g *NAU*; main mass, *G. Hupé*.

Northwest Africa 2626
Northwest Africa
Purchased 2004 November
Martian meteorite (basaltic shergottite)

A 31.07 g completely crusted stone was purchased by Farmer. Classification and mineralogy (J. Wittke and T. Bunch, *NAU*; A. Irving and S. Kuehner, UWS): olivine-orthopyroxene-phyric basaltic rock composed of euhedral to subhedral olivine phenocrysts and preferentially-oriented, prismatic low-Ca pyroxene phenocrysts in a groundmass of zoned pigeonite ($Fs_{26.4}Wo_{12.4}$ to $Fs_{34.1}Wo_{12.4}$) FeO/MnO = 27–31; maskelynite ($An_{66.0–71.0}Or_{0.4}$), olivine ($Fa_{43.6–47.3}$) FeO/MnO = 51–58; Ti chromite (Cr/(Cr+Al) = 0.72–0.79; 9.2–19.8 wt% TiO_2), chromite (Cr/(Cr+Al) = 0.71–0.86; 0.7–2.0 wt% TiO_2), merrillite, ilmenite, ulvöspinel and pyrrhotite. Olivine phenocrysts are zoned from $Fa_{16.7}$ cores to $Fa_{43.3}$ rims, and pyroxene phenocrysts have irregular cores of orthopyroxene (as magnesian as $Fs_{17.9}Wo_{2.4}$, with ~0.03 wt% TiO_2 and ~0.4 wt% Al_2O_3) mantled by pigeonite ($Fs_{25.4}Wo_{4.4}$ to $Fs_{37.0}Wo_{12.7}$) with minor subcalcic augite ($Fs_{21.7–24.0}Wo_{30.8–31.1}$). It is apparently not terrestrially paired to NWA 1195 and NWA 2046 (Irving et al. 2004b; 2005). Specimens: type specimen, 6.4 g, and one polished thin section, *NAU*; one polished thin section, *UWS*; main mass, anonymous.

Northwest Africa 2627
Northwest Africa
Found 2004
Achondrite (acapulcoite)

A 68 g mostly crusted, partial stone was purchased in Erfoud in October 2004. Description and classification (T. Bunch and J. Wittke, *NAU*): recrystallized into polygonal and subhedral grains with the exception of large orthopyroxene grains (up to 3 mm) that poikilitically enclose olivine; heavily fractured, variable grain size, and heterogeneous distribution of phases. Modal analyses (vol%): orthopyroxene, 44; olivine, 41; FeS, 6; metal (and Fe oxides), 5; plagioclase, 3 and minor merrillite, Ca pyroxene and chromite. All silicates have very homogeneous compositions; olivine, $Fa_{13.1}$ (FeO/MnO = 26); orthopyroxene, $Fs_{12.2}Wo_{2.7}$ (FeO/MnO = 13.9); plagioclase, $An_{21.9}$; metal, Ni = 6.7 wt% Ni. Oxygen isotopes (D. Rumble, *CIW*): replicate analyses of acid-washed whole rock material by laser fluorination gave $\delta^{17}O$ = 1.82, 1.75, 1.47, 1.56‰; $\delta^{18}O$ = 4.93, 4.96, 4.51, 4.51‰; $\Delta^{17}O$ = –0.781, –0.865, –0.908, –0.821‰. Weathering grade is W2/3 with ferric Fe staining; shock level

is low to moderate. Specimens: type specimen, 13.7 g *NAU*: main mass, *Strope/Farmer*.

Northwest Africa 2635
Northwest Africa
Purchased October 2004
Achondrite (ungrouped)
A 4.2 kg, partially crusted stone was purchased in Erfoud, Morocco. Description and classification (T. Bunch and J. Wittke, *NAU*), results from one thin section (2.4 cm^2): mostly recrystallized into fine-grained (<0.5 mm, avg. = 0.185 mm) polygonal and subhedral grains with the exception of several medium to large (1.2–3.0 mm) orthopyroxene grains that contain very small olivine (<0.1 mm) inclusions. Olivine and orthopyroxene analyses are homogeneous within the precision of the electron microprobe (±0.15 mol%) and indicate H chondrite affinities. Olivine, $Fa_{18.9}$ (FeO/MnO = 38.1); orthopyroxene, $Fs_{16.8}Wo_{2.9}$ (FeO/MnO = 20.0); plagioclase, $An_{15.1}Or_{4.7}$; metal (only taenite found), Ni = 18.9 wt%; chromite (only one grain found), cr# = 84.5; FeS, Ni = 1.42 wt% and Co = 0.28 wt%, minor merrillite. Most metal has been oxidized; specimen contains ~70% olivine implying it contained less metallic iron than an H chondrite when fresh. Oxygen isotope replicate analyses (D. Rumble, *CIW*) of acid washed, bulk sample by laser fluorination gave $\delta^{17}O$ = +3.23‰, +2.98‰, $\delta^{18}O$ = +5.03‰, +4.37‰ and $\Delta^{17}O$ = +0.614‰, +0.708‰. Weathering grade, W4 with staining; shock level, low. Specimens: type sample, 23.2 g *NAU*; main mass, *Strope/Farmer*.

Northwest Africa 2639
Northwest Africa
Purchased 2004
Mesosiderite
Three complete stones weighing 539 g in total with black to brown surfaces, were purchased in Erfoud, Morocco. Description and classification (T. Bunch and J. Wittke, *NAU*): mesosiderite with nearly equal portions of metal and silicates; metal composed of mostly continuous aggregates of metal balls (0.2–0.4 mm in diameter) that resemble grape clusters and enclose clumps of silicates. Orthopyroxene, $Fs_{23.1–25.5}$ $Wo_{1.7–3.3}$ (FeO/MnO = 23.5–27.9); plagioclase, $An_{88.9}$; chromite, cr# = 82; metal, Ni = 6.1–7.0 wt%, merrillite and troilite. Shock level moderate and a weathering grade of W1. Specimens: type specimen, 21.1g *NAU*; main mass, *A. Hupé*.

Northwest Africa 2641
Northwest Africa
Purchased 2004
Achondrite (howardite)
A complete and crusted 9 g stone was purchased in Erfoud, Morocco. Description and classification (T. Bunch and J. Wittke, *NAU*): Fine to medium-grained (≤1.5 mm) howardite with a modal content of (in vol%): diogenites, 65; cumulate texture, 24, subophitic basalts, 6 other, 5. Diogenite orthopyroxenes, $Fs_{12.7–24}Wo_{0.6–2.7}$ (FeO/MnO = 27.1–30.3); cumulate basalts, $Fs_{29–57.4}Wo_{1.9–3.7}$; cumulate basalt chromite, cr# = 82. Shock level moderate, low weathering grade. Specimens: type specimen, 18.8 g *NAU*; main mass, *Reed*.

Northwest Africa 2644
Northwest Africa
Purchased 2004
Achondrite (howardite)
A 216 g dark, crusted stone was purchased in Erfoud, Morocco in August 2004. Description and classification (T. Bunch and J. Wittke, *NAU*): composed of typical cumulate and basaltic eucrite clasts and large (up to 2.8 mm in diameter), very dark shock-melt and breccia clasts of glass, quench crystals, and shocked diogenite and eucrite fragments, all set in a very light-colored and fine-grained matrix. In addition, irregular to sub-rounded metal grains up to 3 mm in diameter are present within the shocked clasts and randomly distributed in the matrix. Diogenite orthopyroxene, $Fs_{21.3–29}$ $Wo_{0.8–3.1}$ (FeO/MnO = 24.5–32.4); shocked clast pigeonite, $Fs_{29.1–31.8}Wo_{3.4–6.1}$ (FeO/MnO = 30.2=33.4); cumulate pyroxene, $Fs_{51.4–56.4}Wo_{2.9–3.8}$; large plagioclase fragments, $An_{90–94.2}$; metal, Ni = 4.4–18.3 wt%. Low-grade weathering and low level shock; shock-melt/breccia clasts experienced high shock levels. Specimens: type specimen, 22.0 g *NAU*; main mass, *Oakes*.

Northwest Africa 2645
Northwest Africa
Purchased 2004
Enstatite chondrite (EL6)
A single stone of 166 g was purchased in Erfoud, Morocco. Description and classification (J. Wittke and T. Bunch, *NAU*): cataclastic, fine-grained (<0.20 mm) with very rare relict chondrule fragments. Contains orthopyroxene, $Fs_{1.6}Wo_{1.4}$; plagioclase, $An_{5.4–11.1}Or_{0.7–5.4}$; metal. Ni = 3.75 wt%, Si = 0.93–1.45 wt%, troilite, Ti = 3.1 wt%, schreibersite, and daubreelite. Shock level is S2 and the weathering grade is W3 with moderate staining. Specimens: type sample, 21.3 g *NAU*; main mass, *Oakes*.

Northwest Africa 2677
Northwest Africa
Found 2004
Iron (IIICD)
A single mass with a total weight of 100 g was purchased in Erfoud, Morocco in September 2004. Description and classification (Andrew Campbell, *UChi*): the meteorite is a fine octahedrite, Fe, wt% 86.5, Co, wt% 0.585, Ni, wt% 12.8, Ga 7.8 ppm, Mo 3.81 ppm, Ru 0.174 ppm, Rh 0.211 ppm, Pd 6.6 ppm, W 0.135 ppm, Re 0.010 ppm, Os 0.058 ppm, Ir 0.066 ppm, Pt 0.131 ppm, Au 1.83 ppm. Specimens: type specimen, 17 g *UCLA*, 4 g *UChi*; main mass, *Birdsell*.

Northwest Africa 2738

Algeria
Found 2002–2003
Achondrite (howardite)

One single stone of 370 g mostly covered with fresh fusion crust was found in the winter of 2002/2003 by an anonymous finder in the western Sahara. Classification and mineralogy (V. Moggi-Cecchi and G. Pratesi, *MSP*): polymict breccia with cumulate eucrite and diogenite fragments, not exceeding 10% of the total surface. Orthopyroxene fragments are commonly found set into a clastic matrix. Other types of fragments include large blocky plagioclase, $An_{89.58}Ab_{9.95}Or_{0.47}$, augite exsolution lamellae, $Fs_{27.52}En_{28.84}Wo_{43.64}$, and low-Ca pyroxene clasts ($Fs_{59.84}En_{35.27}Wo_{4.89}$); minor phases are sulfides and Fe-Ni metal. Oxygen isotope data (I. Franchi, R. Greenwood, *OU*): $\delta^{17}O = +1.754‰$; $\delta^{18}O = +3.731‰$; $\Delta^{17}O = –0.186‰$ point to interpretation as HED even if the $\Delta^{17}O$ value is slightly more positive than the mass fractionation line for HEDs, probably due to terrestrial contamination. The degree of shock is low as well as weathering. Specimens: main mass with anonymous finder; type specimen 30 g plus one polished thin section, MSP.

Northwest Africa 2739

Algeria
Found 2002–2003
Achondrite (howardite)

Four stones weighing 824 g in total covered with fresh fusion crust were found in winter 2002/2003 by an anonymous finder in the western Sahara. Classification and mineralogy (V. Moggi-Cecchi and G. Pratesi, *MSP*): polymict breccia mainly with cumulate eucrite fragments; diogenite fragments not exceed 10% of the total surface. Orthopyroxene crystals, commonly set into a clastic matrix, are the main silicate phase. Their compositions vary from more Fe-rich terms ($Fs_{24.43}En_{73.90}Wo_{1.67}$) to more Mg-rich terms ($Fs_{12.18}En_{87.66}Wo_{0.16}$). Other types of fragments include large plagioclase ($An_{92.52}Ab_{7.00}Or_{0.48}$) and augite; minor phases are sulfides and Fe-Ni metal; a chromite grain with Cr/(Cr+Al) = 0.88 and Fe:Mn:Mg ratios = 0.85:0.02:0.13) is also present. Oxygen isotope measurements (I. Franchi, R. Greenwood, *OU*): $\delta^{17}O = +1.554‰$; $\delta^{18}O = +3.439‰$; $\Delta^{17}O = –0.234‰$ plot in the HED area, with a slightly more negative value. Shock degree is low as well as degree of weathering. Specimens: main mass with anonymous finder; type specimen 35 g plus one polished thin section, *MSP*.

Northwest Africa 2812

Region El Mahabas, S of Zag, Morocco
Found 2003
Carbonaceous chondrite (CR)

A single stone of 355 g was found by Moroccan nomads and sold in Morocco. Mineralogy and classification (J. Schlüter, *Ham*): abundant well defined chondrules (n = 40: mean 847 μm); coarse grained rims of chondrule minerals; metal-rich porphyritic olivine; amoeboid olivine aggregates. Olivine (n = 45; mean $Fa_{9.56}$; range $Fa_{0.02–24.36}$; two peaks at $Fa_{0–2}$ and $Fa_{9–13}$). Orthopyroxene: (n = 5, $Fs_{4.62–9.33}Wo_{0.15–1.21}$); low-Ca clinopyroxene: (n = 6, $Fs_{16.98–35.86}Wo_{1.04–5.66}$, Cr_2O_3: 0.24–1.04 wt,%, MnO 0.27–0.76 wt%). Weathering grade: W3, shock stage: S2. Specimens: type specimen 21.5 g, *Ham*, main mass, *Burkard*.

Northwest Africa 2815

Morocco(?)
Found 2003
Mesosiderite

A single stone of 147 g was found by Moroccan nomads and sold in Morocco. Mineralogy and classification (J. Schlüter, *Ham*): orthopyroxene clasts up to several mm in size in a fine grained matrix of feldspar and pyroxene. Subequal amounts of metal and silicates. Anorthite (n = 5, $An_{91.81–96.30}Ab_{3.58–8.19}Or_{0–0.26}$); orthopyroxene (n = 7, $Fs_{18.21–35.10}Wo_{0.99–3.94}$, FeO/MnO = 29.16–37.05); low-Ca clinopyroxene (n = 3, $Fs_{35.92–44.76}Wo_{1.81–5.06}$); one olivine grain with mg#: 84.8; one high-Ca clinopyroxene $Fs_{22.7}En_{39.2}Wo_{38.1}$. Orthopyroxene to plagioclase ratio and chemistry indicate class A; texture type 2. Weathering grade: W2, shock stage: S2. Specimens: type specimen 23.2 g, *Ham*, main mass, *Burkard*.

Northwest Africa 2821

Morocco
Found 2003
Rumuruti chondrite (R3.8)

A single stone of 384 g was purchased from Moroccan mineral and fossil dealers in 2003. It was probably found in the Zagora region of Morocco. Mineralogy and classification (J. Schlüter, *Ham*): the sample is brecciated; olivine fragments in matrix $Fa_{39.25 \pm 0.63}$ (range $Fa_{38.5–40.6}$, n = 11), olivine in chondrules $Fa_{37.52 \pm 5.85}$ (range $Fa_{17.3–40.7}$, n = 22), NiO in olivine, average 0.16 wt%; orthopyroxene $Fs_{13.79 \pm 8.52}$ (range $Fs_{6.55–30.1}$, n = 6); clinopyroxene (mean $Fs_{10.95}En_{45.36}Wo_{43.68}$, n=3). Chromium spinel (mean, n = 2: FeO 40.51, MgO 0.97, MnO 0.34, Al_2O_3 5.05, Cr_2O_3 44.15, TiO_2 5.81). Chondrule size (n = 35, 405 μm). Weathering grade: W3, shock stage: S2. Specimens: type specimen, 21.8 g, *Ham*, main mass *Herkstroeter*.

Northwest Africa 2873

Morocco
Found 2002
Achondrite (howardite)

One fresh-looking stone, weighing 36 g, covered with a cracked fusion crust, was purchased in Morocco. Classification and mineralogy (M. Bourot-Denise, *MNHNP*): breccia composed of a relatively fine-grained matrix made up of angular crystals, in which 3 kinds of mm-sized clasts are embedded: diogenitic clasts (pyroxene, plagioclase), basaltic

eucritic clasts (pigeonite, augite, plagioclase), and granular-textured eucritic clasts. Minor phases include silica in small areas, associated with opaques (ilmenite, chromite, pyrrhotite, rarely metal). Dominant diogenitic orthopyroxene, $Fs_{22.3}Wo_{1.8}$; associated plagioclase $An_{83–95}$. Eucritic pyroxene, $Fs_{35.1}Wo_{5.8}$–$Fs_{52.3}Wo_{18.3}$. Low shock stage; weathering grade W1. Specimens: type specimen 7.4 g and one polished mount, *MNHNP*; main mass *Merlier*.

Northwest Africa 3100

Morocco
Purchased 2003 June
Primitive achondrite

A 136 g complete stone with weathered crust was purchased in Rissani. Description and classification (T. Bunch and J. Wittke, *NAU*): polygonal-granular, fine-grained (avg. size 0.155 mm; range, 0.03 to 0.7 mm), thoroughly recrystallized (two very small relict chondrules were observed in one of two thin sections). Mineral modes (vol%): olivine, 78; orthopyroxene, 10; plagioclase, 5; troilite, 5; metal, 1; chromite, diopside and merrillite all <1; olivine is greatly enhanced and metal is depleted relative to LL6 chondrites. Olivine, $Fa_{28.7}$ (FeO/MnO = 65.6; orthopyroxene, $Fs_{23.5}Wo_{0.8}$ (FeO/MnO = 48.8); plagioclase, $An_{34.1}Or_{3.1}$; diopside, $Fs_{12.8}Wo_{41}$; Ni-rich troilite, Ni = 4.2 wt%; metal (taenite only), Ni = 20.1 wt%; chromite, Cr/(Cr+Al) = 0.80, Mg/(Mg+Fe) = 0.21. Shock stage, S1; weathering grade, W2. Oxygen isotopes: replicate analyses of an acid-washed whole rock sample by laser fluorination (T. Larson and F. Longstaffe, *UWO*) gave respectively $\delta^{18}O$ = +1.54, +1.15‰, $\delta^{17}O$ = –0.92, –1.07‰, $\Delta^{17}O$ = –1.72, –1.66‰, which imply that this specimen has affinities with CR chondrites (Bunch et al. 2005). Specimens: type specimens, 20.2 g, and two polished thin sections, *NAU*; main mass, *Farmer*.

Northwest Africa 3102

Morocco
Found 2003
Enstatite chondrite (EL6)

A single 68.2 g stone was purchased in Rissani, Morocco in June 2003. Description and classification (T. Bunch and J. Wittke, *NAU*): completely recrystallized, fine-grained (<0.6 mm diameter) assemblage of mostly enstatite ($En_{98.5}Wo_{0.6}Fs_{0.9}$) with minor plagioclase ($An_{18.8}Or_{5.1}$). kamacite (Ni = 6.6 wt%; Si = 1.10 wt%); Al-bearing SiO_2 phase, graphite, alabandite (Fe = 13.4 wt%; Mg = 2.37 wt%); oldhamite (Fe = 0.88 wt%) and daubreelite. Complex sulfates are also present and are probably terrestrial oxidation products. Shock stage, S2 with low-grade weathering. Specimens: type specimen 13.8 g, *NAU*; main mass, *Oakes*.

Northwest Africa 3105

Morocco
Found 2001
Carbonaceous chondrite (CR2)

A single 89.2 g stone with 80% crust was purchased in Rissani, Morocco in 2002. Description and classification (J. Wittke and T. Bunch, *NAU*): mostly even-sized (1–2 mm) chondrules are slightly flattened and define a preferred orientation. A few chondrules are completely rimmed by metal (Ni = 6.3 wt%). The matrix contains numerous round metal grains (0.3 to 1.8 mm diameter) and smaller (<0.4 mm), irregular metal with included olivine and pyroxenes. Rare CAI amoeboids and patches of phyllosilicates are sparsely distributed throughout the matrix. Matrix olivine, $Fa_{1.4–6.6}$ and orthopyroxenes, $Fs_{3.4–5.2}Wo_{0.3–0.7}$. Shock stage, S2; weathering grade W1. Specimens: type specimen 12.35 g, *NAU*; main mass, *Oakes*.

Northwest Africa 3106

Morocco
Found 2003
Achondrite (diogenite)

A single, 130 g complete stone was purchased in Rissani in December, 2003. Description and classification (T. Bunch and J. Wittke, *NAU*): brecciated, monomict diogenite with subrounded clasts that range from shock level S2 to S4; metal-rich (metal = 11.7 vol%). Low-Ca pyroxene shows a narrow compositional range in all clasts and matrix: $Fs_{30.0–30.7}$ $Wo_{3.4–3.9}$, Fe/Mn = 23.8–26.6; plagioclase, $An_{94.2}$; kamacite, Ni = 5.9 wt%; taenite, Ni = 39.9 wt%. Low weathering grade, slight oxidation and staining. Specimens: type specimen 20.4 g, *NAU*; main mass, *Oakes*.

Northwest Africa 3116

Northwest Africa
Found 2002
Carbonaceous chondrite (CK5)

A 27 g stone was purchased in Erfoud, Morocco in 2002. Description and classification (T. Bunch and J. Wittke, *NAU*): contains numerous amoeboid and melilite-spinel-rich CAIs; well-crystallized matrix of mostly fine-grained olivine ($Fa_{35.4}$), plagioclase ($An_{39.5}$), magnetite (Cr_2O_3, 2.93 wt%; Al_2O_3, 2.85 wt%; MgO, 0.65 wt%; P_2O_5, 0.35 wt%; TiO_2, 0.85 wt%; NiO, 0.43 wt%; CoO, 0.26 wt%), and troilite. Several large xenoliths of shock-melted/crystallized material contains bundles of Ca-rich pyroxene ($Fs_{14.1}Wo_{49.1}$) set in a groundmass of micron-size, Ca-poor pyroxenes ($Fs_{34.2}Wo_{2.0}$) and pentlandite (Ni = 36.7 wt%). Shock level, S3 (xenoliths, S6); low weathering grade. Specimens: type specimen 5.4 g, *NAU*; main mass, *Hupé*.

Northwest Africa 3117

Northwest Africa
Found 2003
Achondrite (howardite)

Three stones that weigh a total of 2.45 kg were purchased in Erfoud, Morocco in December 2003. Description and classification (J. Wittke and T. Bunch, *NAU*): howardite breccia of fine to medium clast size (<3.0 mm); very heterogeneous distribution of diogenite clasts; cumulate basalt clasts were probably derived from the same basaltic

provenance. All clasts are highly shocked (shock level 3–6): pyroxenes and plagioclase were subjected to shock-induced, solid-state recrystallization; a few have completely melted. Eucrite pigeonite, $Fs_{47.3–52}Wo_{16.7–7.7}$; Ca-rich pyroxene, $Fs_{40}Wo_{25.2}$, Fe/Mn = 28.5; plagioclase, $An_{90.7–92.0}$; chromite, cr# = 80.3, fe# = 94.8; metal, Ni = 1.99 wt%; ilmenite and silica. Diogenite orthopyroxene, $Fs_{48.4–54.9}Wo_{1.1–2.7}$, Fe/Mn = 32.5. Possibly paired with NWA 1929. Low weathering grade. Specimens: type specimen 3.8 g, *NAU*; 21.4 g, *UCLA*; main mass, *Hupé*.

Northwest Africa 3118

Northwest Africa
Found 2003
Carbonaceous chondrite (CV3)

Hundreds of fragments (total weight of 5895 g) were purchased in Erfoud, Morocco in December 2003 by A. and G. Hupé. Description and classification (T. Bunch and J. Wittke, *NAU*): olive-grey to tan in color depending on the degree of weathering. In thin section, much of the matrix has a pronounced "ripple" texture: subparallel, curvilinear thin bands of olivine grains ($Fa_{32–36}$), up to 10 μm in size, enclose pod-like masses of micron to submicron Fe-rich olivine ($Fa_{42–58}$), pyroxenes, sulfides, and minor weathering products. Chondrules are typically <2 mm in diameter, although a few chondrules may be as large as 8 mm in diameter. Many types of small CAI inclusions are present and rarely exceed a few mm in diameter. A small stone was found to contain a dark inclusion measuring approximately 9 cm × 2.5 cm × 1 cm. Low weathering grade: no metal observed in the matrix, although some chondrules contain fresh metal. Specimens: type specimen 20.3 g, *NAU*; main mass, *Hupé*.

Northwest Africa 3127

Northwest Africa
Found 2002
Ordinary chondrite (LL3.1)

A 487 g stone was purchased in Safsaf, Morocco in October 2002. Description and classification (T. Bunch and J. Wittke, *NAU*; J. Grossman, *USGS*): polymict chondritic breccia; host is LL3.1 with xenoliths of LL4 and LL5. Chondrules are very similar to the LL3.0 Semarkona and LL3.1 NWA 1756 chondrites in terms of phase and mesostasis compositions, zoning profiles, and textures. FeO contents in 65 type II chondrule olivine cores range from 7.0 to 26.8 wt% and corresponding CaO from 0.06 to 0.20 wt%, which are consistent with an LL3.0–3.2 classification (Jones, 1990); Cr_2O_3 contents in these olivines, which is considered to be a more sensitive indicator of petrologic subtype (Grossman and Brearley 2005), range from 0.08 wt% to 0.58 wt% with an average of 0.38 wt%, consistent with an LL3.1 classification, Chondrule mesostasis is optically isotropic and SEM images show little evidence for metamorphic crystallization of mesostasis glass. Shock level, S2; weathering grade is W3. Specimens: type specimen 20.1 g, *NAU*; main mass *Hupé*.

Northwest Africa 3133

Morocco
Purchased 2004 March/August
Primitive achondrite (ungrouped)

Several complete, dense, brown stones (total 2393 g) were purchased in Tagounite by a Moroccan dealer for A. and G. Hupé (*Hupé*) in 2004 March and August. Classification and mineralogy (T. Bunch and J. Wittke, *NAU*; A. Irving and S. Kuehner, *UWS*): equigranular texture of subhedral to anhedral grains with ~120° triple junctions; mean grain size = 0.28 mm. Moderate but pervasive weathering (W2) has converted some metal and troilite to brown iron hydroxides, which also coat grain boundaries. Mineral mode in vol%: olivine 46, orthopyroxene 28, plagioclase 7, Cr diopside 5, Na-Mg-bearing merrillite 4, metal (including associated hydroxides) 5, chromite 3 and troilite 2. Highly equilibrated mineral compositions: olivine ($Fa_{22.2}$ to $Fa_{22.6}$, FeO/MnO = 57–69), orthopyroxene ($Fs_{18.6}Wo_{2.8}$ to $Fs_{19.2}Wo_{2.1}$, FeO/MnO = 38–49), diopside ($Fs_{7.3}Wo_{44.6}$ to $Fs_{8.7}Wo_{42.2}$, FeO/MnO = 21–33, Cr_2O_3 = 0.56 to 0.82 wt%, Al_2O_3 =1.21–1.74 wt%), plagioclase ($An_{50.1}Or_{2.5}$ to $An_{53.5}Or_{2.3}$), metal (Ni = 17.4–20.2 wt%), chromite (TiO_2 = 2.61 wt%, Cr/(Cr+Al) = 0.73), troilite (Ni = 1.2–5.2 wt%). Oxygen isotopes: replicate analyses of an acid-washed whole rock sample by laser fluorination (D. Rumble, *CIW*) gave respectively $\delta^{18}O$ = +3.06‰, +2.46‰; $\delta^{17}O$ = –1.75‰, –2.25‰ and $\Delta^{17}O$ = –3.36‰, –3.54‰. Triplicate analyses of an acid-washed olivine-rich separate by laser fluorination (T. Larson and F. Longstaffe, *UWO*) gave respectively $\delta^{18}O$ = +1.78‰, +0.92‰, +0.89‰; $\delta^{17}O$ = –2.91‰, –3.67‰, –3.62‰ and $\Delta^{17}O$ = –3.84‰, –4.16‰, –4.08‰. All of these oxygen isotope compositions plot on the CV3 mixing line, suggesting that this achondritic meteorite has affinities with CV chondrites (Irving et al. 2004c). Specimens: type specimen 20.1 g, and one polished thin section, *NAU*; 40.3 g, and four polished thin sections, *UWS*; main mass, *Hupé*.

Northwest Africa 3134

Morocco
Purchased 2004 March
Enstatite chondrite (EL6)

A very fresh (W0), complete stony meteorite (970 g) with a thin, exterior weathering rind was purchased in Rissani by a Moroccan dealer for A. and G. Hupé (*Hupé*) in 2004 March. Classification and mineralogy (A. Irving and S. Kuehner, *UWS*): this meteorite contains abundant enstatite ($En_{98.6}Wo_{1.2}$–$En_{99.3}Wo_{0.6}$, 0.16–0.22 wt% Al_2O_3) and metal (kamacite containing 1–2 wt% Si, and rare taenite inclusions) with subordinate sodic plagioclase ($An_{9.9}Or_{6.0}$–$An_{11.9}Or_{4.7}$), troilite (titanium-poor, with rare daubreelite blebs), alabandite, and unusually fresh oldhamite (with ferroan reaction rims against metal). No chondrules were observed. This specimen may be paired with NWA 3102. Specimens: type specimens 21.7 g, and one polished thin section, *UWS*; 3.7 g, *NAU*; main mass, *Hupé*.

Northwest Africa 3136

Algeria or Morocco
Purchased 2004 April
Lunar meteorite (basaltic regolith breccia)

An oriented 95.1 g shield-shaped stone with partial thin, pale brown fusion crust found in Algeria or Morocco was purchased in Tagounite by a Moroccan dealer for A. and G. Hupé (*Hupé*) in 2004 April. The specimen has a thin, dark weathering varnish, but the interior is a very fresh, black, hard, vitreous-looking rock with small white to yellowish clasts. Classification and mineralogy (S. Kuehner and A. Irving, *UWS*): Polymict breccia consisting of mineral and lithic clasts derived predominantly from mare basalt and mare microgabbro lithologies, and additionally some highlands clasts, in a very fine grained, mostly crystalline and partly vitreous, vesicular matrix. Mineral clasts include calcic plagioclase ($An_{86–97}$), pyroxenes (orthopyroxene, ferropigeonite, ferrosilite, pyroxferroite; FeO/MnO = 68.9–75.8), olivine (mostly $Fa_{30–43}$, but ranging to nearly pure fayalite; FeO/MnO = 81.9–94.2), ilmenite, Ni-poor Fe metal, troilite, Cr-bearing ulvöspinel, and rare pentlandite, baddeleyite, and a Ce-Ca-Fe-bearing, Zr-rich titanate (probably zirconolite). A further description can be found in (Kuehner et al. 2005). Bulk compositions (R. Korotev, *WUSL*): INAA of several subsamples indicate that this specimen is dominated by mare components with ~20% lunar highland components (Korotev and Irving 2005). Oxygen isotopes (D. Rumble, *CIW*): analyses of two whole rock fragments by laser fluorination gave $\delta^{18}O$ = +5.83‰, 5.96‰, $\delta^{17}O$ = +3.06‰, +3.10‰, $\Delta^{17}O$ = –0.03‰, –0.05‰, respectively. Specimens: type specimens, 19.5 g, two polished thin sections, and one polished mount, *UWS*; main mass, *Hupé*.

Northwest Africa 3143

Morocco
Purchased 2004 August
Achondrite (diogenite)

A complete 2335 g stone with black fusion crust and pale orange, translucent interior was purchased from a Moroccan dealer in Rissani by A. and G. Hupé (*Hupé*) in 2004 August. Classification and mineralogy (A. Irving and S. Kuehner, *UWS*): predominantly orthopyroxene ($Fs_{24.9}Wo_{3.3}$, FeO/MnO = 34.9) with minor chromite (some as relatively large grains), calcic plagioclase, olivine ($Fa_{26.5}$, FeO/MnO = 40.8), troilite and altered Ni-poor metal. Partly cataclasized metamorphic texture with ~120° triple grain junctions among compositionally homogeneous orthopyroxene grains. The overall pale orange color of this sample appears to be the result of mild staining by iron hydroxides. Specimens: type specimen, 22.7 g, and one polished thin section, *UWS*; main mass, *Hupé*.

Northwest Africa 3145

Morocco
Purchased 2004 November
Primitive achondrite

A single stone weighing 678.4 g was purchased by H. Strufe (*Strufe*) from a Moroccan dealer in Erfoud in 2004 November. Classification and mineralogy (A. Irving and S. Kuehner, *UWS*; T. Bunch, *NAU*): metamorphic aggregate (average grain size 0.2 mm) consisting of olivine ($Fa_{18.2–18.7}$, FeO/MnO = 35.0–37.6), orthopyroxene ($Fs_{16.2}Wo_{4.0}$–$Fs_{16.6}Wo_{4.2}$, FeO/MnO = 24.3–25.7), plagioclase ($An_{12.3}Or_{6.7}$–$An_{27.4}Or_{2.8}$), clinopyroxene ($Fs_{7.4}Wo_{43.4}$–$Fs_{8.5}Wo_{40.4}$, FeO/MnO = 15.8–21.7) and metal (mostly kamacite with 5% Ni and bands of taenite with 30% Ni, but heavily altered to limonite) with accessory Al-poor chromite, merrillite, and Ni-bearing troilite. Limonite forms abundant veinlets throughout the sample (W2–3). This specimen is essentially identical in texture, mineral compositions and degree of alteration to a polished slice of NWA 2353 analyzed concurrently, and it is concluded that these are paired stones. Both specimens are modally heterogeneous (especially with respect to chromite, clinopyroxene and merrillite), and also with respect to plagioclase composition. Furthermore. it is likely that both of these stones are paired with NWA 2635. Specimens: type specimen, 28.6 g, and one polished thin section, *NAU*; one polished mount, *UWS*; 201 g, *Hupé*; main mass, *Strufe*.

Northwest Africa 3146

Morocco or Algeria
Purchased 2003 December
Rumuruti chondrite (R4)

Several brown stones (total weight 304 g) were purchased from a Moroccan dealer in Erfoud by A. and G. Hupé (*Hupé*) in 2003 December. Classification and mineralogy (A. Irving and S. Kuehner, *UWS*): complex genomict to polymict breccia composed of sparse clasts in a matrix of similar lithologies. All components consist of relatively well-formed chondrules of various types and some angular (possibly xenocrystic) mineral clasts in a finer grained matrix. Most chondrules contain relatively ferroan, Ni-bearing olivine ($Fa_{40.3–40.5}$, NiO = 0.23–0.26 wt%) typical of R chondrites, but some chondrules contain more magnesian olivine (~Fa_{20} and ~$Fa_{2–5}$) or magnesian orthopyroxene (~Fs_{10}). Other phases include Ti-bearing chromite, Cr-bearing clinopyroxene ($Fs_{9.7}Wo_{47.1}$ to $Fs_{11.4}Wo_{45.3}$, Cr_2O_3 = 0.57 wt%), relatively sodic plagioclase ($An_{12.2}Or_{3.6}$ to $An_{27.7}Or_{0.9}$; some as large, angular grains), Cr-rich orthopyroxene laths, iron sulfide, probable xenocrysts of olivine (~Fa_{15}) and orthopyroxene ($Fs_{12.5}Wo_{0.3}$), and interstitial feldspathic glass. Specimens: type specimen, 20 g, and one polished thin section, *UWS*; main mass, *Hupé*.

Northwest Africa 3149

Morocco
Purchased August 2004
Achondrite (howardite)

A very fresh 2594 g stone with complete black and brown fusion crust was purchased in Ouarzazate from a Moroccan dealer by A. and G. Hupé (*Hupé*) in 2004 August. Classification and mineralogy (A. Irving and S. Kuehner, *UWS*): breccia consisting mainly of coarse-grained mineral clasts with subordinate clasts of basaltic eucrite. Mineral clasts include abundant large, pale green diogenitic orthopyroxene ($Fs_{25.3}Wo_{2.0}$, FeO/MnO = 31.1), calcic plagioclase, exsolved pigeonite, silica polymorph, minor olivine ($Fa_{44.4}$, FeO/MnO = 52.9), troilite, ilmenite (one with a baddeleyite inclusion) and metal (5% Ni). Several clasts consist of subhedral orthopyroxene grains within a matrix of troilite and partly altered metal. Specimens: type specimen, 20 g, and one polished thin section, *UWS*; main mass, *Hupé*.

Northwest Africa 3171

Algeria
Purchased 2004 February
Martian meteorite (shergottite)

A 506 g broken, greenish-grey stone, believed to have been found in western Algeria, was purchased by A. Aaronson for D. Gregory (Gregory). About half of the stone is coated by black fusion crust with flow orientation, and in addition there are some small, wart-like protrusions on several sides of the stone that appear to be localized concentrations of pyroxene coated with fusion crust. Classification and mineralogy (A. Irving and S. Kuehner, *UWS*; C. Herd, *UAlberta*): the sample consists of subequal amounts of intergrown prismatic, greyish-brown pyroxene and sparkling, glassy maskelynite. Pyroxenes are zoned from cores of subcalcic augite ($Fs_{19.3}Wo_{33.1}$, FeO/MnO = 26.4) and pigeonite ($Fs_{29.9}Wo_{12.1}$, FeO/MnO = 28.2) to pigeonite rims as ferroan as $Fs_{72.9}Wo_{9.8}$ (FeO/MnO = 39.9). Plagioclase has been converted entirely to maskelynite and is compositionally inhomogeneous ($An_{41.5}Or_{3.7}$–$An_{54.4}Or_{1.3}$). Accessory phases are ulvöspinel, ilmenite, chlorapatite, Na-K-Al-Si-rich glass, silica (formerly stishovite, judging from radial cracks around some grains), merrillite, pyrrhotite and baddeleyite. Rare barite and calcite probably are products of minor desert weathering. Minor rusty staining around ulvöspinel grains and along thin, black fractures appears to be a complex mixture of fine-grained iron hydroxide and Si-Al-Ca-Mg-Cl-K-bearing phases, and possibly is a product of pre-terrestrial alteration (Irving et al. 2004a). This specimen is not obviously paired with any of the other four African olivine-free basaltic shergottites (Zagami, NWA 480, NWA 856 or NWA 1669). Oxygen isotopes (T. Larson and F. Longstaffe, *UWO*): pyroxene $\delta^{18}O$ = +4.43 ± 0.06‰, $\delta^{17}O$ = +2.72 ± 0.00‰, $\Delta^{17}O$ = +0.42 ± 0.03‰; maskelynite $\delta^{18}O$ = +4.69 ± 0.07‰, $\delta^{17}O$ = +2.82 ± 0.1‰, $\Delta^{17}O$ = +0.38 ± 0.07‰. Specimens: type specimen, 22 g and four polished thin sections, *UWS*; main mass, *Gregory*.

Ordinary Chondrite Finds from Eurasia

Table 8 lists 8 ordinary chondrite meteorites that were found in various locations in Eurasia.

Oum Dreyga 24°18′N, 13°6′W

Gour Lafkah, Western Sahara
Fell 2003 October 16, 02:00 UT
Ordinary chondrite (H3–5)

On 16 October 2003, Moroccan soldiers stationed in Western Sahara saw a meteorite falling on Gour Lafkah Mountains, south of Zbayra, about 21 km from Oum Dreyga. The meteorite fell near a 670 km long wall built in 1985, protected by antipersonnel mines, and guarded by soldiers. About 17 kg were recovered. Stones from this fall were later brought to Moroccan dealers. Most of them were collected after a rainfall and are thus slightly oxidized. However, some fragments were picked up soon after the fall; these are very fresh. Fragments have been sold under the names Amgala and Gor Lefcah. Classification and mineralogy (M. Bourot-Denise, *MNHNP*): very fresh, with a black fusion crust; H3–5 breccia ($Fa_{16.7 \pm 6.0}$; $Fa_{19.5 \pm 0.8}$; $Fs_{14.4 \pm 4.4}$; $Fs_{17.4 \pm 1.3}$), S4, W0. Specimens: type specimen 20 g and two polished mounts, *MNHNP*; one 1 kg complete stone and 30 fragments totalling 862 g, *Thomas*.

Pecora Escarpment 01003 85º41.116′S, 68º47.542′W

Pecora Escarpment, Antarctica
Find 2002 January 17
Pallasite

A 2.7 g meteorite fragment was collected on the blue ice at the Pecora escarpment by a member of the Planetary Studies Foundation's Antarctica 2002 Expedition. Classification (P. Sipiera, *PSF*): upon close examination the meteorite was determined to be a fragment of a pallasite. It clearly exhibits surface characteristics indicating where olivine had weathered away. No olivine grains were present for analysis, and the small size and rough nature of the specimen did not make microprobe analysis possible without destroying the specimen. Specimens: type specimen, 2.7 g *DuPont*.

Pecora Escarpment 01006 85º41.011′S, 68º48.045′W

Pecora Escarpment, Antarctica
Find 2002 January 17
Enstatite chondrite (E4)

A 0.75 g meteorite was collected on the blue ice at Pecora Escarpment by a member of the Planetary Studies Foundation's Antarctica 2002 Expedition. Classification (P. Sipiera, *PSF*): the probe section was dominated by pyroxene and no olivine was present. The pyroxene analyses gave a mean composition of $En_{97.58}Fs_{1.49}Wo_{0.93}$ (n = 28). The Si content in the metal was determined to be 1.5 wt%. The petrologic type was determined petrographically. Specimens: type specimen, 0.75 g *DuPont*.

Podgrodzie 50°54.20′N, 21°32.99′E

Poland, Świętokrzyskie province, Tarnobrzeg county
Found 2000 March
Ordinary chondrite (H4/5)

An 8.9 g stone was recovered in a gravel pit (4 m below

surface) of quaternary sediments by Paweł Osowski using a metal detector. It has been broken in many small fragments (max. 3 g) and splinters. Classification and analysis (R. Bartoschewitz, *Bart*; P. Appel and B. Mader, *Kiel*): olivine $Fa_{18.7 \pm 0.3}$; low-Ca pyroxene $Fs_{16.4 \pm 0.2}Wo_{1.3 \pm 0.3}$; Ca-rich pyroxene $Fs_{28.2}Wo_{25.7}$; troilite Ni 0.48%, Co 0.11%. Cr 0.03%. Shock stage S1, weathering grade W2. Magnetic susceptibility: $\log\chi = 5.14 \times 10^{-9}$ m^3/kg; Specimens: type specimen, 1.76 g Kraków; 4.2 g and polished thin section, *Bart*; 3 g P. Osowski, Bodzentyńska 44, PL-25-308 Kielce.

Rahimyar Khan **28°13.5′N, 70°12′E**

Rahimyar Khan, Pakistan
Fell 1983 December
Ordinary chondrite (L5)

A few shepherds heard thundering sounds and later found a single 67.225 kg stone buried about 1 m deep in a sand dune. Classification (A. Rubin, *UCLA*): the meteorite is a chondrite; $Fa_{23.5}$, S3, W1. Specimens: type specimen 25 g *UCLA*; main mass anonymous.

Ramlat as Sahmah—Correction

The name "Ramadah as Sahmah" appears in previous bulletins and this is incorrect. The correct region name is Ramlat as Sahmah. Meteorites from this region will henceforth have this name, meteorites previously named will have a synonym of Ramlat as Sahmah XXX.

San Michele **43°40′N, 13°00′E**

Pesaro Urbino, Marche, Italy
Fell 2002 February 20, 06:45 local time
Ordinary chondrite (L6)

Miss Raffaela Frezzotti was woken up by a sound coming from the roof of her house. Two days later she found a hole in the roof of her house and a single black 237 g stone in the loft. Classification (A. Maras, *URoma*): the stone is an ordinary chondrite, $Fa_{25.4}$, $Fs_{21.6}$; weathering grade W0. Specimens: type specimen, 52 g Museum of Mineralogy, *URoma*, main mass (181 g), finder.

Tanezrouft 082 **24°49.036′N, 00°26.057′W**

Algeria, west Tanezrouft
Found 20 December 2003
Carbonaceous chondrite (CM2)

A single, completely crusted stone, weighing 1012 g, was found. Crust has polygonal cracks (terrestrial alteration), interior is black and slightly friable. Classification and mineralogy (M. Bourot-Denise, *MNHNP*): small, typically <100 μm with few in the 300–800 μm size range, rounded chondrules, abundant angular debris and a few CAIs are set in a very dark matrix. Matrix contains troilite, pentlandite and clusters of framboidal magnetite. Olivine, $Fa_{0.44–64.4}$, mean $Fa_{14.5 \pm 17.0}$; orthopyroxene, $Fs_{0.92–14.9}$, mean $Fs_{2.5}$. Olivines are zoned in FeO-rich chondrules, they contain up to 0.54 wt% CaO in FeO-poor chondrules. Weathering grade is W2/3 (metal is oxidized, sulfide almost intact). Specimens: type specimen 30.2 g and one polished mount, *MNHNP*; main mass with Annick Goueslain and Jean Luc Parodi.

Tanezrouft 087 **25°45.366′N, 00°16.075′E**

Algeria, east Tanezrouft
Found 2003 December 23
Ordinary chondrite (H5)

One 320 g stone, partially covered with a reddened fusion crust was found. Classification and mineralogy (M. Bourot-Denise, *MNHNP*): the stone is an H5 with a large clast of CO3 material comprising about 30% of the entire mass. Host lithology: olivine, $Fa_{20.6 \pm 0.2}$; low Ca pyroxene, $Fs_{18.0 \pm 0.3}$; the chondritic texture is still clearly visible, with many chondrule relics. Shock stage S2, weathering grade W3. CO3 clast: it is much more altered, most metal grains are oxidized and silicates are reddened; chondrules are small (~100 μm) and set in a fine-grained matrix with abundant small sulfide grains. Opaque nodules comprise rusted metal, sulfide and magnetite. Estimated metamorphic grade between those of Colony and Kainsaz. Olivine, $Fa_{1.6–32.6}$, mean $Fa_{15.3 \pm 7.5}$, up to 0.4 wt% CaO; pyroxene, $Fs_{2.0–18.4}$, mean $Fs_{10.1 \pm 5.5}$. Specimens: type specimen 35.1 g and one polished mount, *MNHNP*; main mass with Annick Goueslain and Jean Luc Parodi.

Tiffa 008 **20°21.500′N, 11°51.000′E**

Niger
Found 2001 October
Carbonaceous chondrite (CO3)

A single brown stone of 1149 g was found by G. Moreau in the Ténéré desert. The fusion crust is well preserved and covers 90% of the external surface of the stone. Mineralogy and classification (E. Dransart, *EMTT*): chondrule mean size 0.185 mm; many refractory inclusions; mean olivine composition $Fa_{26.7}$ (range $Fa_{0.18–37.9}$); low-Ca pyroxene mean composition $Fs_{8.2}$ (range $Fs_{3.4–45.1}$). Shock stage S2; weathering grade W1. Specimens: type specimen, 22.2 g *MNHNP*; main mass, *Gabelica*.

Uruq al Hadd 001–002—Correction

The locality name for these two meteorites was misspelled in Table 5 of *The Meteoritical Bulletin* No. 88. The correct spelling is "Uruq al Hadd."

Verkhnyi Saltov **50°06.667′ N, 36°48.006′ E**

Kharkov district, Ukraine
Found 2001 April or May
Iron, coarse octahedrite (IIIAB)

An iron (21 × 16 × 7 cm) weighing 9.53 kg was found during archeological work at the shoreline of the Pechenezhsky water reservoir, 2 km south of the Verkhnyi Saltov village. This piece was recovered within the Verkhnesaltov

archeological complex. This site used to be a large capital city of the Khazar state between the 8th and 10th centuries. Classification and mineralogy (M. A. Nazarov, *Vernad*.): the piece was enveloped by Fe hydroxide layer of about 5 mm thick; kamacite (5.9–6.8 wt% Ni; 0.48–0.59 wt% Co) and taenite (25.7–30.8 wt% Ni; 0.17–0.34 wt% Co) form the Widmanstätten pattern with 1.5–3 mm kamacite bandwidths; rare troilite-chromite inclusions are present. INAA data (J. T. Wasson, *UCLA*): Ni 79.5, Co 4.99 (mg/g), Cr 42, Cu 146, Ga 20.7, Ge <41, As 4.99, Ru 8.5, Re 0.258, Ir 3.16, Pt 10.0, Au 0.682 (μg/g) indicate the IIIAB group. Specimens: type specimen 1.03 kg, *Vernad*; main mass with anonymous owner.

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ABBREVIATIONS FOR ANALYSTS AND SPECIMEN LOCATIONS

These abbreviations are used in the "Info" columns of tables in *The Meteoritical Bulletin*. Unless stated otherwise, type specimen is at the analyst's institution and the main mass is with the finder.

Asu1: classified by G. Huss, *ASU*.

Asu2: classified by L. Bleacher, *ASU*; main mass, finders I. and A. Nelson.

Asu3: classified by G. Huss, *ASU*; main mass, finder M. Wolff; type specimen, Denver.

Asu4: classified by G. Huss, *ASU*; finder, K. Jarnagin; main mass and type specimen, *Denver*.

Asu5: classified by G. Huss, *ASU*; main mass, M. Brown.

Asu6: classified by G. Huss, *ASU*; main mass, finder, J. R. Williams.

Asu7: classified by G. Huss, *ASU*; finder, A. T. Beckman;

main mass and type specimen, *Denver*.
Asu8: classified by G. Huss, *ASU*; finder, K. Rothrock; main mass and type specimen, *Denver*.
Bart1: classified R. Bartoschewitz, *Bart*, P. Appel and B. Madar, *Keil*; type specimen *Krakov*.
Bart2: classified R. Bartoschewitz, *Bart*, type specimen Vernadsky Institute; specimen *Bart*, main mass Flemming/ Berlin.
Bart3: classified R. Bartoschewitz, *Bart*, type specimen Vernadsky Institute; specimen *Bart*, main mass EgerBe2: classified by A. Greshake, *MNB* and M. Kurz.
Be3: classified by A. Greshake, *MNB* and M. Kurz; oxygen isotopes, I. A. Franchi and R. Greenwood, *OU*.
Be5: classified by A. Greshake, *MNB*; main mass, Stefan Ralew, Kunibertstrasse 29, 12524 Berlin.
Be6: classified by A. Greshake, *MNB*; main mass, Peter Marmet, Bern, Switzerland.
Be7: classified by A. Greshake, *MNB* and M. Kurz; main mass, C. Anger, Austria.
Be8: classified by A. Greshake, *MNB*; main mass, *JNMC*.
Ca1: classified by M. Hutson, *Cascadia*; finder, L. Sloan; type specimen, *Cascadia*; main mass, E. Thompson.
Ca2: classified by M. Hutson, *Cascadia*; type specimen, *Cascadia*; main mass, finder, J. Adams.
Ca3: 1998g stone found by Homer Stockam, 03/11/2004; classified by M. Hutson, *ASU*; main mass, L. Sloan; type specimen, Cascadia Meteorite Laboratory. 7160 g stone found by Sonny Clary 02/16/2004; classified by L. Bleacher and M. Hutson, *ASU*.
CAS: classified by B. Miao, Y. Lin, R. Lu and D. Wang, *CAS*.
ENSL2: classified by E.-M. Chamorro, K. Pistre, P. Beck, *ENSL*, P. Grandjean, *UCBL*; main mass, F. Beroud (Lyon) and C. Boucher (Chatel-Guyon).
FSAC1: classified by H.Chennaoui Aoudjehane, *UHAC*, M. Denise, *MNHNP*, A. Jambon, *UPVI*; type specimen, *UHAC*; main mass: L. Baidder (Maroc).
FSAC2: classified by H.Chennaoui Aoudjehane, *UHAC*, M. Denise, *MNHNP*, A. Jambon, *UPVI*; type specimen, *UHAC*; main mass: anonymous finder.
FSAC3: classified by H.Chennaoui Aoudjehane, *UHAC*, M. Denise, *MNHNP*, A. Jambon, *UPVI*; type specimen, *UHAC*; main mass: Bouabdellah/Chaieb/Milhi Service géologique d'Oujda Maroc.
Ha1: classified by P. Sipiera, *PSF*; main mass, *Huss*.
Ha2: classified by P. Sipiera and K. J. Cole, *PSF*; oxygen isotope analyses, I. A. Franchi, *OU*; main mass, finder *Pelisson*.
Ha3: classified by P. Sipiera, *PSF*.
Ha4: classified by P. Siperia, *PSF*; main mass, finder, M. Miller.
Ha5: classified by P. Sipiera, *PSF*; main mass, finder, *Verish*.
Ha6: classified by P. Sipiera, PSF; main mass and type specimen, *DuPont*.
Ham1: classified by J. Schlüter, *Ham*; main mass, H. Burkard, Bonn and I. Herkstroeter, Hamburg.
La1: classified by J. T. Wasson, *UCLA*; main mass *Birdsell*.
La2: classified by A. Rubin, *UCLA*; finder, D. Brookins; main mass, Kansas Meteorite Society.
La3: classified by A. Rubin, *UCLA*; finder, John Wolfe; main mass, *Verish*.
La4: classified by A. Rubin, *UCLA*; main mass, finder *Verish*.
La5: classified by A. Rubin, *UCLA*; main mass, finder N. Gessler.
La6: classified by A. Rubin, *UCLA*; main mass, finder P. Gessler.
La7: classified by A. Rubin, *UCLA*; finder G. LaBarbera; main mass, *Verish*.
La8: classified by A. Rubin, *UCLA*; finder J. LaBarbera; main mass, *Verish*.
La9: classified by A. Rubin, *UCLA*; main mass, finder T. Kunihiro.
La10: classified by A. Rubin, *UCLA*; finder, D. Thomas; type specimen, *PSF*; main mass, *Verish*.
La11: classified by A. Rubin, *UCLA*; finder, G. Long; type specimen, *PSF*; main mass, *Verish*.
La12: classified by A. Rubin, *UCLA*; main mass, finder R. Matson.
La13: classified by A. Rubin, *UCLA*, type specimen, *PSF*; main mass, *Verish*.
La14: classified by A. Rubin, *UCLA*, main mass, finder, C. Donnelly.
La15: classified by P. Warren, *UCLA*, main mass, finder, Labenne.
Mainz1: Data collated by J. Zipfel (Mainz) from various sources.
MK2: Classified by Marvin Killgore, Main mass Southwest Meteorite Collection; type specimen at the University of Arizona.
Mün2: classified by A. Sokol, A. Bischoff and M. Niemeier, *Mün*, (data ± 1 mol%; EDS analyses); main mass with finder, J. Wassmann.
Mün3: classified by A. Sokol, A. Bischoff, *Mün*, (data ± 1 mol%; EDS analyses).
Mün5: classified by A. Sokol, A. Bischoff, *Mün*; type specimens, *Ham*, *Mün*, and *Mainz*; main mass, Industrial Research Center (IRC) Tripoli.
Mün6: classified by M. Niemeier, A. Bischoff, *Mün*.
Mün7: classified by A. Bischoff, A. Sokol, M. Niemeier, *Mün*.
Mün8: classified by A. Bischoff, A. Sokol, M. Niemeier, *Mün*; main mass, *JNMC*.
Mün9: classified by A. Bischoff, A. Sokol, M. Niemeier; main mass with *SDCMC*.
Mün10: classified by A. Bischoff, A. Sokol, M. Niemeier *Mün*; main mass, *HSSH*.
NAU1: classified by Ted Bunch, *NAU*; type specimen *NAU*.
NAU2: classified by Ted Bunch, *NAU*; type specimen *NAU*; main mass, *Drummond*.
NAU3: classified by Ted Bunch, *NAU*; type specimen *NAU*; main mass, *Regelman*.

NAU4: classified by Ted Bunch, *NAU*; type specimen *NAU*; main mass, *Burkhard*.
NAU5: classified by Ted Bunch, *NAU*; type specimen *NAU*; main mass, *Birdsell*.
NAU6: classified by Ted Bunch, *NAU*; type specimen *NAU*; main mass, *Reed*.
NAU7: classified by Ted Bunch, *NAU*; type specimen NAU; main mass, *Hupé*.
NAU8: classified by Ted Bunch, *NAU*; type specimen *NAU*; main mass, *Strufe*.
NHMV1: classified by F. Brandstätter, *NHMV*; main mass, finder, M. Kriegler.
NHMV2: classified by F. Brandstätter, *NHMV*.
NHMV3: classified by F. Brandstätter, *NHMV*; main mass, finder, V. Apolloner.
NU: classified by H. Wang, Y. Liang, R. Wang, J. Ji, W. Zhang and X. Chen, *NU*.
Pa1: classified by M. Bourot-Denise *MNHNP*; main mass, F. Kuntz and F.-X. Flotterer.
Pa2: classified by M. Bourot-Denise, *MNHNP*; main mass, G. Merlier.
Pa3: classified by M. Bourot-Denise, *MNHNP*; main mass, Labenne.
Pa4: classified by M. Bourot-Denise, *MNHNP*; main mass, B. Fectay and K. Bidaut.
Pa16: classified by M. Bourot-Denise, *MNHNP*; main mass, A. Goueslain and J. L. Parodi.
Pa17: classified: M. Bourot-Denise, *MNHNP*; main mass, Thomas.
Pa20: classified by M. Bourot-Denise, *MNHNP*; main mass, M. Franco, Caillou Noir.
Pa21: classified by E. Dransart, *EMTT*; finder G. Moreau; type specimen, *MNHNP*; main mass, Z. Gabelica.
Pa22: classified by E. Dransart and M. Baron *EMTT*; finder G. Moreau; type specimen, *MNHNP*; main mass *EMTT*, finder.
Pa23: classified by M. Bourot-Denise, *MNHNP*; main mass, J. L. Leran.
PCU1: Classified by J. Haloda and P. Tycova, *PCU*; type specimen *PCU*.
Pd1: classified by A. M. Fioretti and R. Carampin, *UPad*; main mass and thin section, *MNA-SI*.
Pol: Classified by Łukasz Karwowski, University of Silesia; type specimen at University of Silesia.
Prato1: classified by G. Pratesi and V. Moggi Cecchi, *MSP*.
Prato2: classified by G. Pratesi and V. Moggi Cecchi, *MSP*; finder, G. Pratesi, *MSP*.
Prato3: classified by V. Moggi Cecchi, *MSP*
Prato4: classified by V. Moggi Cecchi, *MSP*; main mass, *Chinellato*.
Prato5: classified by G. Pratesi and V. Moggi Cecchi, *MSP*; found by a hiker; main mass, *Chinellato*.
Rm1: classified by M. Macrì, A. Maras and M. Serracino, *Roma*; main mass and thin section, *MNA-SI*.
SAm1: classified by M. Valenzuela, *Chile*; main mass, finder, E. Stucken.
Silesia1: classified by Łukasz Karwowski, *Silesia*; type specimens 100 g, *Silesia*; 57.6 g *Mün*; main mass, finder, Labenne.
Sn1: classified by A. Burroni and L. Folco, *MNA-SI*; magnetic classification, P. Rochette, *CEREGE* and L. Folco *MNA-SI* according to Rochette et al. (2003).
Sn3: classified by L. Folco, *MNA-SI*.
Sn4: classified by L. Folco, *MNA-SI*; thin section, *MNA-SI*; type specimen, *OAM*.
Sn5: classified by L. Folco, *MNA-SI* and M. D'Orazio, *Pisa*; finder, F. Merighi; type specimen, *OAM*; 2.7 g and 3 thin sections, *MNA-SI*.
TCU1: classified by A. Ehlmann, *TCU* and T. J. McCoy, *SI*; finder, P. Alastuey; main mass and type specimen, *TCU*.
UAriz1: classified by D. Schrader and D. Kring, *UAriz*; finder, H. McCormick; main mass, Fleischman Planetarium, Reno, NV.
UCLA: classified by A. Rubin, type specimen *UCLA*.
UPB1: classified by B. Devouard, *UBP*, M. Messaoudi, H. Afalfiz and D. Belhai, *USTHB*; type specimen, *MNHNP*, main mass, M. Franco, Caillou Noir.
UPMCPa3: classified by A. Jambon, D. Badia, O. Boudouma, *UPMCP*, and M. Bourot-Denise, *MNHNP*; main mass, finder, M. Franco, Caillou Noir.
USA5: classified by M. Hutson, *Cascadia*; finder, L. Sloan; type specimen, *Cascadia*; main mass, E. Thompson.
USA7: classified by M. Hutson, *Cascadia*; type specimen, *Cascadia*; main mass, finder, J. Adams.
UWS1: classified by A. Irving, *UWS*; main mass, *Hupé*.
Vr1: classified by S. Afansiev, *Vernad*, analyzed by N. Kononkova, *Vernad.*
Vr2: classified by S. Afansiev, *Vernad*, analyzed by A. Ulianov, *MSU*.
Vr3: classified by Lorenz C.A. *Vernad*.
Vr5: classified by M. Ivanova, *Vernad*.
Vr6: classified by D. Badyukov, *Vernad*.
Vr7: classified by M. Ivanova, *Vernad*; main mass lost.
Vr8: classified by M. Nazarov, *Vernad*; main mass, V. Anoshin.
Vr9: classified by M. Nazarov, *Vernad*; main mass, S. Murashova and S. Murashov.
Vr10: classified by M. Ivanova, *Vernad*; finder, S. Egorov.
Vr11: A fireball was seen in this area in 1954, and this meteorite was found during ploughing. The meteorite was strongly heated in a forge. Classified by L. V. Agafonov, S. M. Kuznetsov, L. N. Pospelova, United Institute of Geology, Geophysics and Mineralogy, Novosibirsk. Main mass, Kosikhino museum, Altai District.
Vr12: classified M. Ivanova and E. Zhiganova, *Vernad*; main mass, D. Kalinin.
Vr13: classified by M. Nazarov, *Vernad* and Th. Ntaflos, *Vienna*.
Vr14: classified by R. Batoschewitz (*Bart*) and P. Appel Univ. Kiel, Type specimen *Vernad*; Main mass Th. Kurtz, Hanover; specimen Bartoschewitz.

ADDRESSES OF METEORITE COLLECTIONS AND RESEARCH FACILITIES

ASU: Center for Meteorite Studies, Department of Geological Sciences, Arizona State University, Tempe, Arizona, USA.
Bart: Bartoschewitz Meteorite Laboratory, Lehmweg 53, D-38518 Gifhorn, Germany.
Birdsell: Arizona Skies Meteorites, Tucson, Arizona.
Burkard: Horst Burkard, Bonn, Germany.
CAS: Chinese Academy of Sciences, Beijing, China.
Cascadia: Cascadia Meteorite Laboratory, Portland State University, Department of Geology, Room 17 Cramer Hall, 1721 SW Broadway, Portland, OR 97201, USA.
CEREGE: CEREGE ARBOIS, BP 80, Aix En Provence, Cedex 4, France.
Chile: Plaza Ercilla 803, University of Chile, Casilla 13518-Correo 21, Santiago-Chile.
CIW: Carnegie Insitution Washington, Geophysical Laboratory, 5251 Broad Branch Rd., NW, Washington DC 20015, USA.
CNRST: Centre National de Recherche Scientifique et Technique, Casablanca, Morocco.
Denver: Denver Museum of Natural History, City Park, Denver, CO 80205, USA.
DuPont: James M. DuPont Meteorite Collection, Planetary Studies Foundation 612 Chatham Circle, Algonquin, IL 60102, USA.
EMTT: Etudes Métallurgiques et de Traitement Thermique, Parc du Chater-Bât. B, 1, avenue du Chater, 69340 Francheville, France.
ENSL: Ecole Normale Supérieure de Lyon, Laboratoire de Sciences de la Terre, 46 allée d'Italie 69364 Lyon Cedex, France.
Farmer: Michael Farmer 4201 W. Oxbow Mine Ct. Tucson, Arizona, USA.
Fectay: Bruno Fectay and Carine Bidaut, La Memoire de la Terre SARL Rue de la Mairie, 39240 La Boissiere, France.
Franco: Caillou Noir, 100 Chemin des Campènes 74400 Les Praz de Chamonix, France.
Gabelica: Z. Gabelica, Université de Haute Alsace, 3 Rue A. Werner, F-68093 Mulhouse, Cedex, France.
Gessler: Mr. Nicholas Gessler, Box 706, 22148 Monte Vista Road, Topanga, CA 90290–0706, USA.
Gregory: David Gregory, 230 First Avenue, Suite 108, St. Thomas, Ontario N5R 4P5, Canada.
GSI: Geological Survey of India, 27 Jawaharlal Nehru Road, Kolkata 700016, India.
Ham: Mineralogical Museum, Universität Hamburg, Grindelallee 48, D-20146 Hamburg, Germany.
Hupé: G. and A. Hupé, 2616 Lake Youngs Court SE, Renton, WA 98058, USA.
Köln: Universität zu Köln, Institut für Mineralogie und Geochemie, Zülpicher Strasse 49 b, 50674 Köln, Germany.
Krakov: Muzeum Geologiczne ING PAN, ul. Senacka 1–3, PL-31–002, Kraków, Poland.
Kurz: M. Kurz, Schillerstrasse 7, D-34626 Neukirchen, Germany.
Mainz: Institut für Chemie, Abteilung Kosmochemie, Postfach 3060, D-55020 Mainz, Germany.
Matson: Rob Matson, 8 Merano Ct., Newport Coast, CA 92657, USA.
MNA-SI: Museo Nazionale dell'Antartide, Università di Siena, Via Laterina 8, I-53100 Siena, Italy.
MNB: Museum für Naturkunde, Invalidenstrasse 43, D-10115 Berlin, Germany.
MNHNP: Museum National d'Histoire Naturelle, Paris, France.
MSP: Museo di Scienze Planetarie, Via Galcianese, 20/h, 59100 Prato, Italy.
MSU: Moscow State University, Department of Geology, Vorobjovy Gory, Moscow, 119899, Russia.
Mün: Institut für Planetologie, Wilhelm-Klemm-Str. 10, 48149 Münster, Germany.
NAU: Northern Arizona University, Flagstaff, AZ 86011, USA. See http://www4.nau.edu/meteorite.
NHM: Department of Mineralogy, The Natural History Museum, Cromwell Road, London SW7 5BD, UK.
NHMV: Naturhistorisches Museum, Postfach 417, A-1014 Wien, Austria.
NMB: Museum fuer Naturkunde, Institut fuer Mineralogie, Humboldt-Universitaet zu Berlin, Invalidenstrasse 43, 10115 Berlin, Gerrmany.
NU: Nanjing University of Science and Technology, 1 Lianhecun, Xiaowei Road, Nanjing, China.
Oakes: Nelson Oakes, Route 1, House 50C, Uniondale, PA 18470, USA.
OAM: Osservatorio Astronomico e Museo "Giorgio Abetti" in San Giovanni in Persiceto, Bologna, Italy.
OU: Planetary and Space Sciences Research Institute, The Open University, Milton Keynes, MK7 6AA, UK.
UPad: Istituto di Geoscienze e Georisorse-CNR, Università di Padova, Italy.
PCU: Charles University, Faculty of Science, Institute for Cheochemistry, Mineralogy and Mineral Resources, Albertov 6, 128 43 Prague 2, Czech Republic.
Pelisson: Richard and Roland Pelisson, 270 Rue de la Cascade, 38660 La Terrasse, France.
PSF: Planetary Studies Foundation, Harper College, Schmitt Meteorite Research Group, 1200 W. Algonquin Rd., Palatine, IL 60067, USA.
Reed: PO Box 1141, Delta, Colorado, USA.
ROM: Royal Ontario Museum, 100 Queen's Park, Toronto, Ontario M5S 2C6, Canada.
SI: Department of Mineral Sciences, NHB-119, National Museum of Natural History, Smithsonian Institution, Washington, DC 20560, USA.
SML: M. Killgore, Southwestern Meteorite Laboratory, PO Box 95, Payson, AZ 85547, USA.
TCU: Oscar E. Monnig Collection, Dept. of Geology, Texas Christian University, Ft. Worth, Texas 76129.

UAriz: Lunar & Planetary Laboratory, University of Arizona, 1629 E. University Blvd., Tucson, AZ 85721, USA.
UBP: Université Blaise Pascal, Clermont-Ferrand, France.
UCB: Université Claude Bernard, Lyon 1, France.
UChi: University of Chicago, Chicago, IL 60637, USA.
UCLA: Institute of Geophysics & Planetary Physics, University of California, Los Angeles, CA 90095–1567, USA.
UHAC: Université Hassan II Aïn Chock, Faculté des Sciences, Département de Géologie, BP 5366 Maârif Casablanca Morocco.
UJM: Universitè Jean Monnet, Saint-Etienne, France.
UMo: Department of Earth Sciences, Universiy of Modena, Modena, Italy.
UO: Université d'Oran, Es-Sénia, Algeria.
Uppsala: Department of Earth Science Uppsala University, Uppsala, SE-752 36 Sweden.
UPVI: Université Pierre & Marie Curie (Paris VI), 4 Place Jussieu, 75005 Paris, France.
URoma: DST, Università "La Sapienza"-Roma, Italy.
UWO: University of Western Ontario, London, Ontario N6A 3KT, Canada.
UWS: University of Washington, Department of Geological Sciences, Box 351310, Seattle, WA 98195, USA.
Verish: Robert Verish, Meteorite Recovery Foundation, P. O. Box 237, Sunland, CA 91040, USA.
Vernad: Vernadsky Institute of Geochemistry and Analytical Chemistry, Russian Academy of Sciences, Kosygin Str. 19, Moscow 117975, Russia.
Vienna: University of Vienna, Dr-Karl-Lueger-Ring 1, A-1010 Wien, Austria.

Table 1. Meteorites from Africa (named).

Name	Place of recovery	Date found (mm/dd/yyyy)	Latitude (N)	Longitude (E or W)	Mass (g)	Pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Comments[a]	Type spec (g)	Info §
Acfer 324	Algeria	10/2001	27°30.05′	3°52.19′E	69	1	CR2	–	–	7.5 (1.4-39.1)	13.9 (1.2–72.1)	1	14	Ha2
Acfer 347	Algeria	2002	27°41′	4°18′E	1165	1	L3	S2	W4	1–26	1–19	–	1160	Sn3
Acfer 360	Algeria	11/15/2002	27°29′	3°46′E	68	1	Ure	–	–	–	–	See separate entry	14	ENSL2
Acfer 364	Algeria	2002	27°42′	4°31′E	656	1	LL6	S3	W1	30	24	Granulitic breccia	656	Sn3
Acfer 365	Algeria	11/2002	27°36.56′	3°56.14′E	1456	1	L5	S3	W3	24.8	20.5	–	1455	Prato1
Acfer 367	Algeria	11/2002	27°41.06′	4°25.75′E	410	1	H5	S1	W1	19.6	17.1	–	410	Prato1
Acfer 368	Algeria	11/2002	27°41.33′	4°23.16′E	126	1	H4	S2	W1	19.4	17	–	125	Prato1
Acfer 369	Algeria	11/2002	27°40.02′	4°38.90′E	122	1	H4	–	–	19.4	16.7	–	122	Prato1
Acfer 371	Algeria	11/2002	27°40.69′	4°27.92′E	9608	1	L5	S4	W0	23.7	20.2	–	9586	Prato1
Acfer 372	Algeria	11/2002	26°36.70′	3°53.22′E	238	1	LL6	–	–	27.9	23.3	–	233	Prato1
Acfer 373	Algeria	11/2002	26°37.55′	3°56.66′E	128	1	H5	–	–	18.7	16.6	–	128	Prato1
Acfer 375	Algeria	11/2002	27°30.51′	3°45.83′E	495	1	LL6	–	–	28.7	24.2	–	495	Prato1
Acfer 376	Algeria	11/2002	27°38.37′	3°56.10′E	132	1	H6	–	–	18.8	16.6	–	130	Prato1
Acfer 377	Algeria	11/2002	27°39.75′	3°58.61′	132	1	L4	S1	W1	23.8	20.1	–	167	Prato1
Arlit	Niger	02/2002	18°40.380′	7°20.535′E	20.1	1	H5	S3	W1	18.6 ± 0.9	17.1 ± 1.2	North of Agades	10	Pa23
Benguerir	Morocco	11/22/2004	~32°15′	~8°09′W	25–30 kg	Many	LL6	S3/4	W0	29 ± 1	25 ± 1	See separate entry	~350	UHAC
Capot Rey	Niger	03/2004	20°07.556′	10°12.336′E	38000	Many	H5	–	–	–	–	See separate entry	32.1	Pa22
Daraj 114	Libya	01/19/1987	29°37′36″	11°41′38″E	85	1	H4	–	C	18.5	15.8	2	3.7	Mainz1
Daraj 131	Libya	03/20/1987	29°18′16″	11°54′26″E	151	1	LL6	–	A	30.4	25.6	3	0.4	Mainz1
Daraj 141	Libya	1987	29°35′	11°47′E	94	1	L4	–	C	18.9	–	–	94	Mainz1
Dar al Gani (DaG)														
DaG 1026	Libya	10/1999	26°54.42′	16°40.89′E	214	1	L3	S2	W4	23.8 ± 8.6	26.0 ± 13.7	–	43	Ha1
DaG 1027	Libya	10/1999	27°13.86′	16°14.94′E	137	3	L5	S3	W2	25.7	24.3	–	29	Ha1
DaG 1028	Libya	10/2000	27°04.54′	16°03.98′E	131	1	CO3		W2	1–65	1–32	Probably paired with DaG 749, 858, 1006	23	Ha1
DaG 1039	Libya	1999	27°19.81′	16°13.87′E	889	Several	L6	S4	W2	22.2	18.8	sv	21	Be2
DaG 1040	Libya	2001–2002	27°16.88′	16°24.50′E	781	15	CV3	Low	Mod	19.6 (2–30)	2–7	See separate entry	20.7	Be3
Djebel Chaab 003	Algeria	12/14/2003	25°05.210′	0°49.944′E	4570.2	14	L6	S1	W2	25.4 ± 0.2	22.9 ± 1.7		20.3	Pa16
El Atchane 013	Algeria	11/2002	29°58.50′	4°40.00′E	720	3	H5	S2	W3	18.1	16.2	Hammadet el Atchane	720	Prato1
Erg Tiferine	Algeria	03/02/2001	27°16′	6°46′	325	1	H5/6	S5	W3	19.5	16.7	–	35.7	NHMV3
Gourara	Algeria	11/2002	29°45.53′	1°53.08′E	1272	25	H6	S2	W2	18.9	16.7	–	1272	Prato1
Hammadah al Hamra (HaH)														
HaH 330	Libya	03/17/2003	28°28.108′	12°53.839′E	209	5	L6	S4	W3–4	25.5	21	sv, terrestrial cv	25.5	Mün5
HaH 331	Libya	03/19/2003	29°49.115′	12°56.788′E	2197	Many	L5/6	S3	W3	25	20.5	Terrestrial cv	26.3	Mün5

Table 1. Meteorites from Africa (named). *Continued.*

Name	Place of recovery	Date found (mm/dd/yyyy)	Latitude (N)	Longitude (E or W)	Mass (g)	Pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Comments[a]	Type spec (g)	Info §
HaH 332	Libya	03/19/2003	29°49.115′	12°56.788′E	710	6	L6	S3	W1	25	21.5	–	24.9	Mün5
HaH 333	Libya	03/19/2003	29°54.842′	13°02.428′E	631	1	H5/6	S3	W2	19.5	17	sv, terrestrial cv	28.6	Mün5
HaH 334	Libya	03/19/2003	30°02.073′	13°07.810′E	662	1	H5	S2	W2	19	17	–	76.4	Mün5
HaH 335	Libya	05/29/2004	28°49.896′	12°37.930′E	111	1	H3	S2	W1	17.5 ± 2	14 ± 5	–	23	Mün6
HaH 336	Libya	05/30/2004	28°39.041′	12°41.475′E	880	24	H4/5	S2	W2–3	17	15.5	terrestrial cv	26	Mün6
Kalahari 001	Botswana	Purchased in Kuke, Botswana	–	–	150	1	H4/5	S2	W2–3	19	17	–	22	Mün3
Kalahari 002	Botswana	Purchased in Kuke, Botswana	–	–	141	1	H5	S2	W3–4	20.5	17.5	sv	20	Mün3
Kalahari 003	Botswana	Purchased in Kuke, Botswana	–	–	827	1	H5/6	S1	W4	19	17	–	26	Mün3
Kalahari 004	Botswana	Purchased in Kuke, Botswana	–	–	87	1	H5	S3	W3–4	19	17	sv	19	Mün3
Kalahari 005	Botswana	Purchased in Kuke, Botswana	–	–	220	1	H5	S3	W3–4	19	17	Prob. paired 004		
Kalahari 006	Botswana	Purchased in Kuke, Botswana	–	–	157	1	H5	S2	W3–4	18	16.5	–	20	Mün3
Kalahari 007	Botswana	Purchased in Kuke, Botswana	–	–	72	1	H4	S2	W3–4	17	15	–	15	Mün3
Kalahari 008	Botswana	09/1999	20.9818°S	22.9766°E	585	1	Lunar	–	–	–	–	See separate entry	20	Mün4
Kalahari 009	Botswana	09/1999	20.9818°S	22.9766°E	13500	1	Lunar	–	–	–	–	See separate entry	20	Mün4
Mabe	Botswana	04/1999	21.3000° S	24.1028° E	378	1	H5	S2	W4	19	17	–	31	Mün3
Maigatari-Danduma	Nigeria-Niger	01/08/2004	12°50′	9°23′E	4629	2	H5/6	S3	W0	20.3	18	Observed fall; see separate entry	47	NHMV2
Matsitama	Botswana	11/1999	21.0909°S	26.4859°E	187	1	H4/5	S3	W2	19	17	–	20	Mün3
Mut	Egypt	10/23/2003	25°35.99′	28°27.13′E	1800	1	H5		W3	19.7	18.1	Dakhla oasis	300	NHMV1
Oum Dreyga	West Sahara	10/16/2003	24°18′	13°6′W	17000	Many	H3–5	S4	W0	–	–	See separate entry	20	Pa17
Plateau du Tademait 002	Algeria	11/2002	28°17.86′	0°39.99′E	4334	53	L6	S3	W3	25.7	21.8	–	4334	Prato1
Plateau du Tademait 003	Algeria	11/2002	28°17.90′	0°40.00′E	10000	3	L5	S4	W4	24.7	21.2	–	2906	Prato1
Plateau du Tademait 004	Algeria	11/2002	28°18.00′	0°30.00′E	3000	1	L6	S4	W4	24.4	20.7	–	3000	Prato1
Plateau du Tademait 005	Algeria	11/2002	27°53.50′	0°13.00′E	420	1	L6	S3	W1	25.3	21.5	–	420	Prato1
Sahara 99477	Sahara	1999	Undisclosed	Undisclosed	9220	7	L5	S6	W2	24.1	21.6	Veined, ringwoodite	100, 57.6	Silesia1
Sahara 02502	Sahara	01/2002	Undisclosed	Undisclosed	79.47	1	CO3	S1	W1–2	0–54	2	Possible subtype 3.4	15.2	UPMCPa3
Sahara 02503	Sahara	05/2002	Undisclosed	Undisclosed	741	2	CV3		W3	0–25	1–15	–	21.1	UPMCPa3
Sahara 03502	Sahara	01/2003	Undisclosed	Undisclosed	4737	1	LL3		W1	27.5 ± 06	20.1 ± 6.8	–	26.5	UBP1
Sahara 03503	Sahara	02/2003	Undisclosed	Undisclosed	754	1	LL6	S2	W1	31.6	26.1	–	26.1	Pa20
Tanezrouft 072	Algeria	11/2002	24°26.29′	0°06.18′E	62285	66	H6	S2	W1	20.8	17.7	–	5022	Prato1
Tanezrouft 073	Algeria	11/2002	24°25.44′	0°07.34′E	130	1	L6	S3	W4	24.9	21.1	–	120	Prato1
Tanezrouft 074	Algeria	11/2002	24°13.33′	0°28.41′E	496	1	H5	S1	W4	18.2	16.4	–	496	Prato1
Tanezrouft 075	Algeria	11/2002	24°04.10′	01°21.15′W	616	2	L6	S4	W0	25	21.1	–	616	Prato1

Table 1. Meteorites from Africa (named). *Continued.*

Name	Place of recovery	Date found (mm/dd/yyyy)	Latitude (N)	Longitude (E or W)	Mass (g)	Pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Comments[a]	Type spec (g)	Info §
Tanezrouft 076	Algeria	12/20/2003	24°37.230′	0°33.702′W	3548	5	L6	S4	W2	25.6 ± 0.4	21.4 ± 0.34	–	27.2	Pa16
Tanezrouft 077	Algeria	12/21/2003	24°37.267′	0°32.377′W	217	1	L4	S2	W2	25.3 ± 0.4	21.6 ± 1.1	4	20.5	Pa16
Tanezrouft 078	Algeria	12/21/2003	24°44.144′	0°31.448′W	1599	1	L6	S3	W2	25.8 ± 0.6	21.6 ± 0.5	–	24.6	Pa16
Tanezrouft 079	Algeria	12/22/2003	24°34.815′	0°31.118′W	1031	1	H6	S1	W2/3	19.6 ± 0.2	17.4 ± 0.2	–	33.3	Pa16
Tanezrouft 080	Algeria	12/22/2003	24°39.264′	0°34.157′W	1056	1	L(LL)5	S2	W2	26.2 ± 0.4	22.1 ± 0.9	–	24.9	Pa16
Tanezrouft 081	Algeria	12/18/2003	25°14.419′	0°11.909′E	213	1	H5	S1	W1	18.8 ± 0.3	16.6 ± 0.2	Very porous, very friable	23.5	Pa16
Tanezrouft 082	Algeria	12/20/2003	24°49.036′	0°26.056′W	1012	1	CM2		W2/3	0.4–64.4	0.9–14.9	See separate entry	30.2	Pa16
Tanezrouft 083	Algeria	12/22/2003	24°38.883′	0°30.862′W	265	1	L(LL)6	S2	W3	26.6 ± 1.6	23.0 ± 2.4	Thick fusion crust (1 mm)	28.5	Pa16
Tanezrouft 084	Algeria	12/22/2003	24°45.366′	0°26.075′W	369	1	L6	S4	W2	25.6 ± 0.5	21.5 ± 0.8	Networks of parallel black veins	34.8	Pa16
Tanezrouft 085	Algeria	12/23/2003	25°12.770′	0°02.339′E	90.4	1	H3	S5	W2	0.84–37.5	4.1–21.2	Estimated subtype 3.7	23.5	Pa16
Tanezrouft 086	Algeria	12/23/2003	25°17.423′	0°03.373′E	136	1	H5	S2	W2	19.6 ± 0.2	17.6 ± 0.9		30.7	Pa16
Tanezrouft 087	Algeria	12/23/2003	25°45.366′	0°16.075′E	320	1	H5	S2	W3	20.6 ± 0.2	18.0 ± 0.3	See separate entry	35.1	Pa16
Tiffa 008	Niger	10/2001	20°21.500′	11°51.000′E	1149	1	CO3	–	–	–	–	See separate entry	22.2	Pa21
Touat 001	Algeria	11/2002	27°38.12′	0°31.00′W	2650	1	L6	S2	W2	24.7	20.9	–	2650	Prato1
Touat 002	Algeria	11/2002	27°28.00′	0°31.00′W	5150	1	H5	S2	W3	19.3	16.9	–	5150	Prato1
Zelfana	Algeria	11/2002	32°09.50′	4°38.00′E	1058	1	L5	S2	W2	24.6	21.1	–	1050	Prato1
Zillah 001	Libya	12/10/1990	29°02.220′	17°01.110′E	1475	1	L6	S3	W1–2	24.5	20.5	–	20	Mün2
Zillah 002	Libya	12/10/1990	29°02.220′	17°01.110′E	172	1	Euc	S3	W1	–	61 ± 1.2	sv; cv; found a few meters from Zillah 001	20	Mün2

[a](1) $\delta^{17}O = -1.568, -1.619‰$; $\delta^{18}O = +1.438, +1.396‰$; likely to be paired with Acfer 270; (2) an additional 67.94 g at NHM; (3) additional material: 87.1 g, NHMV; 61 g, MNB; (4) breccia, shock grade variable up to S4 between clasts.

Abbreviations: sv = shock veins; cv = calcite veins.

Table 2. Ordinary Chondrite finds from North and South America.

Name	Find site	County, State	Date found (mm/dd/yyyy)	Latitutde (N)	Longitude (W)	Mass (g)	Pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Wo (mol%)	Type (g)	Comment[a]	Info
North America (USA)																
Bluebird	Alluvial fan	Mohave, AZ	01/15/2002	35º52.050′	114º11.500′	3650	2	L6	S4	W2	24.5	–	–	26.4	1	La3
Buck Mountain Wash	Pediment terrace	Mohave, AZ	01/28/2004	34º43.472′	114º12.53′	798	1	H3–5	S2	W1	16.1	13.3	–	34.7	–	Ca1
Coyote Dry Lake (CyDL)				35º +	116º +											
CyDL 001	Dry lake	San Bernardino, CA	05/25/1995	3.01′	46.01′	338	1	H5	S2	W3	18.6	–	–	22.7	–	La4
CyDL 002	Dry lake	San Bernardino, CA	12/13/1998	2.852′	43.855′	106.7	2	H5–6	S2	W3–W6	19.6	16.1	–	22.1	2	La4
CyDL 003	Dry lake	San Bernardino, CA	12/21/1998	5.285′	45.239′	255.72	1	H5	S2	W3	18.7	–	–	36.73	–	La5
CyDL 024	Dry lake	San Bernardino, CA	06/01/1999	4.290′	46.323′	2430	2	H5	S2	W3	18.8	–	–	20.23	–	La5
CyDL 033	Dry lake	San Bernardino, CA	01/13/1999	3.363′	46.578′	5220	6	H5	S2	W4	18.7	–	–	27.9	–	La6
CyDL 040	Dry lake	San Bernardino, CA	01/16/1999	5.624′	45.806′	344	1	H4	S2	W2	18.8	–	–	20.5	Paired to CyDL 063?	La4
CyDL 054	Dry lake	San Bernardino, CA	01/16/1999	4.600′	44.800′	392.8	1	H5	S2	W3	18.7	–	–	35.5	–	La4
CyDL 061	Dry lake	San Bernardino, CA	01/20/1999	3.145′	46.002′	2134	14	H5	S2	W4	18.7	–	–	24.9	–	La6
CyDL 063	Dry lake	San Bernardino, CA	01/21/1999	3.527′	46.380′	67.61	1	H4	S2	W1	18.5	–	–	15.1	Paired to CyDL 040?	La6
CyDL 064	Dry lake	San Bernardino, CA	01/21/1999	3.490′	46.458′	1364.31	6	H5	S2	W5	18.4	–	–	25.2	–	La6
CyDL 067	Dry lake	San Bernardino, CA	01/21/1999	2.289′	45.186′	412.05	2	L6	S3	W5	25.4	–	–	25.5	Paired to CyDL 223?	La5
CyDL 080	Dry lake	San Bernardino, CA	01/31/1999	4.441′	45.670′	278.1	4	H5	S2	W3	18.6	–	–	20.5	–	La5
CyDL 105	Dry lake	San Bernardino, CA	04/17/1999	3.044′	46.019′	61.5	4	H5	S2	W4	18.9	–	–	15.8	–	La7
CyDL 110	Dry lake	San Bernardino, CA	04/17/1999	2.775′	44.128′	68.02	3	H4	S3	W3	19.2	–	–	13.5	–	La7
CyDL 115	Dry lake	San Bernardino, CA	04/07/1999	3.519′	46.123′	1369	21	H5–6	S2	W3–W4	19	–	–	27.4	2	La5
CyDL 116	Dry lake	San Bernardino, CA	07/22/1999	3.508′	46.140′	4.4	1	H6	S2	W4	18.3	–	–	4.4	–	La4
CyDL 117	Dry lake	San Bernardino, CA	07/23/1999	3.006′	44.666′	162	1	H3	S2	W3	18	–	–	33.2	–	La4
CyDL 119	Dry lake	San Bernardino, CA	07/24/1999	2.289′	45.186′	3.2	1	H5	S2	W5	18.7	–	–	3.2	–	La4
CyDL 120	Dry lake	San Bernardino, CA	07/08/1999	3.536′	46.123′	18.5	1	H5	S1	W4	18.8	–	–	17.95	–	La7
CyDL 121	Dry lake	San Bernardino, CA	07/08/1999	3.568′	46.110′	14.2	1	H4	S2	W2	18.7	–	–	2.8	–	La7
CyDL 129	Dry lake	San Bernardino, CA	11/02/2000	4.150′	45.012′	140	1	H5	S2	W3	18.6	–	–	20.6	–	La4
CyDL 130	Dry lake	San Bernardino, CA	11/02/2000	4.071′	44.964′	6.1	1	H4	S2	W3	19	–	–	5.9	–	La4
CyDL 132	Dry lake	San Bernardino, CA	02/19/2000	4.217′	44.908′	17.4	1	H4	S2	W3	18.6	–	–	17.2	–	La7
CyDL 134	Dry lake	San Bernardino, CA	08/04/2000	5.550′	45.650′	117.5	1	H5	S2	W3	19.2	–	–	22.5	–	La8
CyDL 138	Dry lake	San Bernardino, CA	08/04/2000	3.170′	45.987′	18.3	1	H5	S2	W5	18.5	–	–	17.1	–	La8
CyDL 139	Dry lake	San Bernardino, CA	08/04/2000	3.170′	45.923′	10.4	1	H4	S2	W4	19.1	–	–	3.1	–	La7
CyDL 142	Dry lake	San Bernardino, CA	05/05/2000	4.035′	44.912′	32.22	1	H4	S2	W3	18.9	–	–	10.2	–	La4
CyDL 151	Dry lake	San Bernardino, CA	02/16/2001	3.361′	43.421′	90.04	1	H6	S2	W5	19.3	–	–	22.92	2	La12
CyDL 152	Dry lake	San Bernardino, CA	02/16/2001	3.364′	43.419′	10.84	1	H5	S2	W4	19	–	–	2.79	2	La12
CyDL 153	Dry lake	San Bernardino, CA	07/03/2001	4.417′	45.823′	13.87	1	H5	S2	W3	18.8	–	–	3.99	–	La12
CyDL 155	Dry lake	San Bernardino, CA	04/15/2001	4.108′	46.143′	17.02	1	H4	S2	W2	18.6	–	–	5.07	–	La12
CyDL 159	Dry lake	San Bernardino, CA	11/16/2001	3.519′	46.123′	17.7	1	H5	S2	W4	18.6	–	–	5.8	–	La4
CyDL 160	Dry lake	San Bernardino, CA	01/13/2002	3.691′	45.777′	76.88	1	H5	S2	W1	17.9	–	–	15.44	–	La12
CyDL 162	Dry lake	San Bernardino, CA	01/13/2002	4.681′	46.066′	9.87	1	H5	S2	W3		16.1	–	2.15	–	La12
CyDL 163	Dry lake	San Bernardino, CA	08/02/2002	4.200′	46.200′	16.66	1	H5	S3	W5	18.3	–	–	3.7	–	La12
CyDL 164	Dry lake	San Bernardino, CA	08/02/2002	3.501′	46.442′	43	1	H5	S2	W3	18.3	–	–	10.21	–	La12
CyDL 165	Dry lake	San Bernardino, CA	02/18/2002	4.133′	45.718′	42.57	1	L6	S3	W4	24.4	–	–	9.1	–	La12
CyDL 175	Dry lake	San Bernardino, CA	12/13/2002	3.285′	45.259′	36.35	1	H6	S1	W3	18.1	–	–	9.09	–	La12
CyDL 176	Dry lake	San Bernardino, CA	01/02/2003	3.271′	43.803′	187.55	2	H6	S3	W1	18.4	–	–	19.58	–	La12
CyDL 194	Dry lake	San Bernardino, CA	09/01/2004	5.303′	45.170′	1.47	1	L6	S3	W1	23.8	–	–	0.65	Paired to CyDL 222?	La12

Table 2. Ordinary Chondrite finds from North and South America. *Continued.*

Name	Find site	County, State	Date found (mm/dd/yyyy)	Latitutde (N)	Longitude (W)	Mass (g)	Pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Wo (mol%)	Type (g)	Comment[a]	Info
CyDL 221	Dry lake	San Bernardino, CA	05/12/2003	3.430′	43.230′	54.31	1	H4			18.1	16.7	1.2	12.1	–	NAU7
CyDL 222	Dry lake	San Bernardino, CA	08/05/2004	2.405′	45.332′	22.5	1	L5	S2	W1	23.7	–	–	4.85	Paired to CyDL 194?	La7
CyDL 223	Dry lake	San Bernardino, CA	08/05/2004	2.305′	45.491′	512	8	L6	S4	W5	24.9	–	–	30.6	Paired to CyDL 067?	La7
CyDL 230	Dry lake	San Bernardino, CA	06/13/2004	5.375′	45.004′	16.36	1	H6	S3	W3	19.1	16.4	1.1	3.64	–	La12
CyDL 235	Dry lake	San Bernardino, CA	10/07/2004	3.377′	44.026′	81.4	1	LL6	S4	W2	28.1	–	–	16.4	–	La4
CyDL 249	Dry lake	San Bernardino, CA	10/24/2004	5.255′	44.762′	71.8	1	H4	S2	W2	18.1	15.9	–	14.22	–	La9
Fife	Wheat field	McCulloch, TX	05/04/2003	31°23′23″	99°24′21″	8600	1	H5	S3	W1	17.6	15.9	1.1	8500	–	TCU1
Flagler	Ploughed field	Kit Carson, CO	1972 or 1973	39°13.8′	102°59.4′	4100	1	H3.8	S1	W3	17.7 ± 4.2	16.5 ± 0.4	1.3 ± 0.3	4100	–	Asu4
Gila Bend	Desert basin	Maricopa, AZ	01/07/2000	33°2′	112°37′	3700	1	L5	S3	W1	24.6	20.3	1.9	192.3	–	Asu2
Greener Reservoir	Dry wash	Millard, UT	04/27/2004	39°29.48′	112°56.52′	45	1	H4	S2	W3	19.3	17.4	–	9.2	–	USA7
Hartsel	Open prairie	Park, CO	2000	38°50′	105°48′	490	1	H4	S3	W2	18.4	16.1	1.1	20.6	–	Asu5
Kansas State University	Desk	Riley, KS	05/05/2004	39°16′32″	96°15′34″	301	1	H4	S1	W3	18.4	–	–	26	3	La2
Little Spring Creek	Sandy bank	Alamosa, CO	1937	37°41′	105°42′	29500	1	H5	S1	W1	19.2	17.1	–	20.2	–	Asu6
Lucerne Valley (LV)																
LV 025	Dry lake	San Bernardino, CA	04/08/2003	34°30.652′	116°56.127′	21	1	H4	S2	W5	17.8	–	–	5	–	La13
LV 026	Dry lake	San Bernardino, CA	09/27/2003	34°30.006′	116°56.530′	5.6	1	L5	S1	W5	24.3	–	–	1.05	–	La12
LV 027	Dry lake	San Bernardino, CA	11/10/2003	34°29.229′	116°57.202′	3.1	1	L6	S2	W5	24.2	–	–	1.02	–	La12
LV 040	Dry lake	San Bernardino CA	03/16/2004	34°29.526′	116°56.585′	5.21	1	L6	S3	W5	25.0 ± 0.5	–	–	1.5	Paired to LV 041?	La5
LV 041	Dry lake	San Bernardino, CA	03/16/2004	34°29.385′	116° 6.566′	0.84	1	L6	S3	W2	24.5 ± 0.4	–	–	0.22	–	La5
LV 042	Dry lake	San Bernardino, CA	03/26/2004	34°29.157′	116°57.822′	2.17	1	L6	S5	W4	24.2 ± 0.4	–	–	0.78	–	La14
LV 043	Dry lake	San Bernardino, CA	03/26/2004	34°29.074′	116°57.753′	1.75	1	L4	S3	W3	23.9 ± 0.6	–	–	0.4	–	La5
LV 044	Dry lake	San Bernardino, CA	04/23/2004	34°29.048′	116°57.650′	106.22	1	L6	S3	W3	25.6 ± 0.4	–	–	23.04	–	La12
LV 045	Dry lake	San Bernardino, CA	09/07/2004	34°29.220′	116°57.907′	38.56	1	L6	S2	W3	24.0 ± 0.5	–	–	8.62	–	La6
LV 046	Dry lake	San Bernardino, CA	09/07/2004	34°29.245′	116°58.410′	10.32	1	L6	S3	W4	24.4 ± 0.3	–	–	2.7	–	La6
LV 047	Dry lake	San Bernardino, CA	09/07/2004	34°29.168′	116°58.434′	30.43	1	L6	S2	W5	24.5 ± 0.4	–	–	7.99	–	La6
LV 048	Dry lake	San Bernardino, CA	09/07/2004	34°29.2′	116°57.5′	2.29	1	H4	S3	W3	18.8 ± 0.3	–	–	0.79	–	La5
LV 049	Dry lake	San Bernardino, CA	12/11/2004	34°29.083′	116°57.664′	9.2	1	L6	S2	W5	23.7	20.4	1.4	1.9	–	La12
Lunar Dry Lake	Dry lake	Nye, NV	08/16/2003	38°23.951′	115°59.802′	32.5	1	L5		W4	24.5	20.9	1.3	6.7	–	Ha5
Majuba	Desert roadway	Pershing, NV	Spring 1999	40°37.59′	118°24.62′	370	1	L5	S2	W2	24.8	20.8	–	30	–	UAriz1
Majuba 002	Placers	Pershing, NV	11/05/2003	40°37.699′	118°25.002′	2420	1	H4	S2	W5	18.3	–	–	35.1	–	La10
Majuba 003	Placers	Pershing, NV	10/10/2003	40°37.847′	118°24.551′	1306	1	H4	S2	W3	18.8	–	–	25.2	–	La11
New Raymer	Open grass lands	Weld, CO	1995	40°37.55′	103°50.42′	3400	1	LL4	S1	W2	28.8	23.1	–	412	–	Asu3
Ovid (b)	Sandy soil	Sedgwick, CO	1943	40°45.5′	102°22.5′	860	1	H5	S1	W2	19.2	16.7	1.6	680	4	Asu7
Palo Verde Mine	Pediment terrace	Mohave, AZ	11/03/2004	34°42.874′	114°11.485′	9158	2	L6	S4	W2	25	21	1.39	129	–	Ca3
Red Dry Lake (RdDL)																
RdDL 024	Dry lake	Mohave, AZ	09/13/2003	35°41.839′	114°01.920′	17.9	1	L5	S3	W2	24.6	20.9	1.07	6	–	Ha4
RdDL 025	Dry lake	Mohave, AZ	09/28/2003	35°40.768′	114°02.603′	6.55	1	L5/6	S3	W3	25.7	21.8	0.47	1.3	–	Ha4

Table 2. Ordinary Chondrite finds from North and South America. *Continued.*

Name	Find site	County, State	Date found (mm/dd/yyyy)	Latitutde (N)	Longitude (W)	Mass (g)	Pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Wo (mol%)	Type (g)	Comment[a]	Info
RdDL 028	Dry lake	Mohave, AZ	04/24/2004	35°38.688′	114°02.071′	11.3	1	H4	S2	W2	18.3	–	–	4	–	La4
RdDL 029	Dry lake	Mohave, AZ	04/24/2004	35°37.609′	114°02.624′	5.25	1	H4	S2	W3	18.2	–	–	1.6	–	La4
Roach Dry Lake (RhDL)																
RhDL 021	Dry lake	Clark County, NV	12/29/2001	35°40.379′	115°22.030′	59.2	1	H6	S2	W3	18.6	–	–	16.02	5	La12
Stoneham	Farm land	Weld, CO	1960s	40°38.27′	103°41.83′	5000	1	H5	S1	W1	19.7	17	1.3	5000	–	Asu8
Superior Valley (SuV)																
SuV 020	Dry lake	San Bernardino, CA	05/01/2003	35°14.315′	117°01.577′	307.75	1	L6	S2	W3	25	–	–	26.63	–	La12
SuV 022	Dry lake	San Bernardino, CA	10/25/2004	35°14.223′	117°0.971′	38.9	1	H5	S2	W2	18.6	–	–	8.02	–	La9
South America (Chile)																
Balneario el Condor, synonym for Viedma																
Paposo	Rocky desert	II Region, Antofagasta	10/01/2001	25°8.6′S	70°19.2′	~2000	1	LL6	S2	W2	33	27	–	70	–	SAm1

[a](1) Clearly not paired with Gold Basin (L4, W3); (2) genomict breccia, clasts with shock stage up to S4 present; (3) used as a paperweight. Listed as unclassified Kansas meteorite in E. King collection; (4) does not appear to be paired with Ovid, which is an H6: detailed comparison provided by Huss; (5) possibly a fragment of Primm.

Table 3. Meteorites from Frontier Mountain, Antarctica.

Name	Date found (mm/dd/yyyy)	Latitude (S)	Longitude (W)	Mass (g)	Pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Mag. Sus	Comment[a]	Info
Frontier Mountain (FRO)													
FRO 90127	10/01/1991	72°57′44″	160°29′04″	13.55	1	H3	S2	W1	17 (11–20)	14 (10–17)	–	br	Sn1
FRO 90182	10/01/1991	72°59′27″	160°24′30″	12.45	1	H4–6	S3	W2	18	16	–	br	Sn1
FRO 90198	10/01/1991	72°59′27″	160°32′27″	0.93	1	Euc	–	Low	32	36	–	br	Sn1
FRO 90200	10/01/1991	72°57′20″	160°32′16″	3.19	1	Ure	–	–	–	–	–	pbr; see separate entry	Sn1
FRO 90225	10/01/1991	72°57′20″	160°26′18″	8.4	1	H3	S2	W2	18	17	–	br	Sn1
FRO 90233	10/01/1991	72°57′22″	160°26′18″	31.89	1	Ure	–	–	–	–	–	mbr; see separate entry	Pd1
FRO 90235	10/01/1991	72°57′22″	160°26′29″	23.94	1	L6	S5	W1	25	21	–	Veined	Sn1
FRO 93001	04/01/1994	72°57′20″	160°29′29″	4.84	1	Acap-Lod	–	–	–	–	–	Gabbro; see separate entry	Sn1
FRO 03005	01/01/2004	72°57′18.5″	160°23′03.3″	20.66	1	EL4	–	–	–	–	5.15	See separate entry	Sn1
FRO 03008	12/28/2003	72°57′04.0″	160°30′38.8″	4.67	1	H6	S2	W1	19.4	17.1	4.99	br; veined	Rm1
FRO 03009	12/28/2003	72°57′04.7″	160°30′47.0″	7.13	1	H6	S2	W1	19.4	16.8	5.01	–	Rm1
FRO 03010	12/28/2003	72°57′04.7″	160°30′47.0″	10.1	1	L6	S5	W1	25.2	21.3	4.64	–	Rm1
FRO 03011	12/28/2003	72°57′06.1″	160°30′51.4″	8.64	1	LL3	S2	W1	4.2–23.8	10.1–33.1	3.98	–	Rm1
FRO 03012	12/28/2003	72°57′06.1″	160°30′51.4″	10.5	1	H5	S1	W1	19.5	17.5	5.11	–	Rm1
FRO 03013	12/28/2003	72°57′06.7″	160°30′50.5″	1.41	1	H~5	–	–	–	–	5.47	–	Sn1
FRO 03014	12/28/2003	72°57′05.3″	160°30′50.3″	3.26	1	H5	S2	W2	19.8	17.5	4.65	–	Rm1
FRO 03015	12/28/2003	72°57′07.8″	160°31′14.9″	2.65	1	H5	S2	W1	19.4	17.8	5.23	–	Rm1
FRO 03016	12/28/2003	72°57′08.4″	160°31′18.6″	2.71	1	H5	S2	W1	19.6	18	5.04	–	Rm1
FRO 03017	12/29/2003	72°57′09.8″	160°29′11.9″	17.39	1	H5	S2	W1/2	19.5	17.5	5.12	–	Rm1
FRO 03018	12/29/2003	72°57′11.1″	160°28′35.4″	3.99	1	H6	S2	W1	19.5	17.2	4.98	–	Rm1
FRO 03019	12/29/2003	72°57′09.7″	160°28′12.6″	9.02	1	H6	S3	W1	20.9	17.4	5	br	Rm1

Table 3. Meteorites from Frontier Mountain, Antarctica. *Continued.*

Name	Date found (mm/dd/yyyy)	Latitude (S)	Longitude (W)	Mass (g)	Pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Mag. Sus	Comment[a]	Info
FRO 03020	12/29/2003	72°57′09.7″	160°28′12.6″	1.36	1	L6	S4	W0/1	25.3	21.5	4.82	–	Rm1
FRO 03022	12/29/2003	72°57′03.2″	160°27′35.8″	2.47	1	Ure	–	–			3.98	pbr; see separate entry	Pd1
FRO 03023	12/29/2003	72°57′06.3″	160°27′16.5″	1.84	1	H6	S2	W1	19.4	17.5	5.04	–	Pd1
FRO 03024	12/29/2003	72°57′09.6″	160°27′06.0″	1.53	1	H4	S2	W3	18.4	16.8	4.86	–	Pd1
FRO 03025	12/29/2003	72°57′09.4″	160°26′43.7″	3	1	H6	S2	W1	19	17.4	5.08	–	Pd1
FRO 03026	12/29/2003	72°57′15.2″	160°27′03.5″	7.76	1	L6	S3	W1	22.4	17.8	5.14	br	Pd1
FRO 03027	12/28/2003	72°57′09.9″	160°29′53.5″	5	1	L3–6	S4	W0	12.0–27.5	2.9–26	4.64	br	Pd1
FRO 03028	12/28/2003	72°57′09.9″	160°29′54.0″	10.17	1	H5	S2	W1	18.6	17.2	5.13	br	Pd1
FRO 03029	12/28/2003	72°57′09.9″	160°29′54.0″	26.11	1	H5	S2	W1	18.6	17	5.06	br	Pd1
FRO 03030	12/28/2003	72°57′09.9″	160°29′54.8″	28.1	1	L4	S1	W1	26	22.1	4.35	–	Pd1
FRO 03031	12/28/2003	72°57′07.3″	160°30′33.8″	3.44	1	H6	S5	W1	18.6	17.2	5.02	–	Pd1
FRO 03032	12/28/2003	72°57′07.3″	160°30′33.8″	2.97	1	L6	S4	W0	25	22	4.68	–	Pd1
FRO 03033	12/28/2003	72°57′07.3″	160°30′33.8″	2.55	1	H~5	–	–	–	–	5.16	–	Sn1
FRO 03034	12/28/2003	72°57′05.6″	160°30′43.0″	6.74	1	H5	S2	W1	19.3	17.6	5.02	–	Pd1
FRO 03035	12/28/2003	72°57′05.4″	160°30′46.9″	9.96	1	L5	S4	W1	24.1	20.9	4.62	br	Pd1
FRO 03036	12/28/2003	72°57′05.2″	160°30′47.7″	7.18	1	H5	S2	W1	19.4	18	4.92	br	Pd1
FRO 03037	12/28/2003	72°57′05.2″	160°30′47.7″	4.47	1	L4	S2	W0	26.1	20.1	4.44	Veined	Pd1
FRO 03038	12/28/2003	72°57′05.8″	160°30′49.4″	3.15	1	L3	S2	W1	0.45–30.6	1.2–22.5	4.14	–	Pd1
FRO 03039	12/28/2003	72°57′05.8″	160°30′50.7″	1.31	1	H5	S2	W1	19.1	17.3	5.27	–	Pd1
FRO 03040	12/28/2003	72°57′05.8″	160°30′50.7″	3.35	1	H5	S2	W1	18.9	17.5	5.12	br	Pd1
FRO 03041	12/28/2003	72°57′03.9″	160°30′51.3″	12.31	1	H3–4	S2	W2	18.1	16.5	4.8	br	Pd1
FRO 03042	12/28/2003	72°57′04.9″	160°30′57.9″	15.47	1	H4	S3	W2	15	14.5	4.83	–	Pd1
FRO 03043	12/28/2003	72°57′06.9″	160°31′11.4″	6.32	1	H4–5	S2	W1	18.1	16.9	5.14	–	Pd1
FRO 03044	12/28/2003	72°57′07.0″	160°31′20.0″	5.4	1	H6	S3	W2	19.3	18	4.85	–	Pd1
FRO 03045	12/28/2003	72°57′07.0″	160°31′20.0″	3.71	1	H6	S2	W1	18.4	16.9	5.11	–	Pd1
FRO 03046	12/28/2003	72°57′07.8″	160°31′21.0″	11.55	1	H5–6	S2	W1	18.9	17.4	4.87	–	Pd1
FRO 03047	12/29/2003	72°57′12.0″	160°29′22.0″	8.23	1	H4/5	S2	W1	19.5	17.6	5.17	–	Pd1
FRO 03048	12/29/2003	72°57′09.3″	160°28′02.1″	9.75	1	H6	S2	W1	18.5	17	4.96	–	Pd1
FRO 03049	12/29/2003	72°57′08.0″	160°27′59.0″	8.18	1	L3	S4	W0	8.6–25.7	2–26	4.19	–	Pd1
FRO 03050	12/29/2003	72°57′08.0″	160°27′59.0″	11.77	2	L3	S4	W0	0.6–25.5	3.6–25.7	4.43	–	Pd1
FRO 03051	12/29/2003	72°57′12.9″	160°29′31.7″	5.54	1	H6	S2	W1	18.5	17.2	4.97	–	Pd1
FRO 03052	12/29/2003	72°57′12.9″	160°29′31.7″	4.51	1	H6	S2	W1	18.6	17.1	5.02	–	Pd1
FRO 03053	12/29/2003	72°57′10.1″	160°27′51.5″	21.54	1	H6	S2	W1	18.8	17.2	4.94	–	Pd1
FRO 03054	12/29/2003	72°57′08.8″	160°27′41.8″	0.94	1	L6	S4	W0/4	24.1	21.9	4.61	–	Sn1
FRO 03055	12/29/2003	72°57′04.7″	160°27′32.6″	3.37	1	H4	S2	W2	17.8	16.4	4.93	–	Sn1
FRO 03056	12/29/2003	72°57′05.9″	160°27′29.7″	3.84	1	H5	S2	W1	17.7	16.2	5.1	–	Sn1
FRO 03057	12/29/2003	72°57′09.9″	160°27′26.1″	61	1	L6	S5	W1/2	24.2	20.6	4.71	–	Sn1
FRO 03058	12/29/2003	72°57′08.7″	160°26′54.3″	2.42	1	H6	S1	W2	18.2	16.4	4.87	–	Sn1
FRO 03060	12/29/2003	72°57′11.1″	160°26′25.3″	1.59	1	H6	S1	W1/2	19.6	16.7	4.97	Veined	Sn1
FRO 03061	03/01/2004	72°59′16.8″	160°24′21.8″	1.75	1	H3–4	S1	W2	3–38	4–20	4.6	Dark inclusions	Sn1
FRO 03062	03/01/2004	72°59′20.3″	160°24′18.2″	1.63	1	H3	S1	W2	18.1	2–17	4.88	–	Sn1
FRO 03063	03/01/2004	72°59′43.5″	160°23′50.4″	9.57	1	H5	S2	W2	17.9	16.5	4.94	–	Sn1

Table 3. Meteorites from Frontier Mountain, Antarctica. *Continued.*

Name	Date found (mm/dd/yyyy)	Latitude (S)	Longitude (W)	Mass (g)	Pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Mag. Sus	Comment[a]	Info
FRO 03064	03/01/2004	72°59′43.5″	160°23′50.4″	3.51	1	H4	S2	W1	17.5	16	4.95	–	Sn1
FRO 03065	03/01/2004	72°59′44.1″	160°23′41.7″	26.43	1	H5	S2	W1	17.6	16.2	4.98	–	Sn1
FRO 03066	03/01/2004	72°59′44.3″	160°23′38.4″	4.34	1	H6	S2	W1/2	17.5	16.2	4.74	br	Sn1
FRO 03067	03/01/2004	72°59′41.5″	160°23′25.0″	2.25	1	H3	S1	W1	17.1	13–20	4.84	–	Sn1
FRO 03068	03/01/2004	72°59′42.6″	160°23′21.3″	0.73	1	H3	S1	W1	14–17	6–15	4.94	–	Sn1
FRO 03069	03/01/2004	72°59′41.5″	160°23′55.5″	1.52	1	H3–6	S2	W2	18.1	16.5	4.81	–	Sn1
FRO 03070	03/01/2004	72°59′40.3″	160°23′59.7″	0.46	1	H3	S1	W1	7–22	5–22	4.88	–	Sn1
FRO 03071	04/01/2004	72°57′10.7″	160°26′35.3″	0.17	1	H5/6	S3	W2	18.4	17	4.9	Veined	Sn1
FRO 03072	04/01/2004	72°57′12.1″	160°26′33.2″	1.94	1	H4	S3	W0	18.1	16.7	5.2	–	Sn1
FRO 03073	04/01/2004	72°57′12.2″	160°26′32.3″	0.41	1	H6	S1	W0	20.1	17.8	5.08	–	Sn1
FRO 03074	04/01/2004	72°57′08.4″	160°27′16.1″	12.05	1	H5	S2	W1	17.9	16.6	5.3	–	Sn1
FRO 03076	12/29/2003	72°57′14.3″	160°29′11.1″	24.27	1	H4	S3	W1	17.5	17.2	5.05	–	Sn1
FRO 03077	12/29/2003	72°57′10.1″	160°26′38.9″	352.2	1	H5	S4	W1	17.1	16.2	5.16	–	Sn1
FRO 03078	12/29/2003	72°57′09.2″	160°26′37.1″	1.43	1	L6	S4	W2	24.4	21	4.29	–	Sn1
FRO 03079	12/29/2003	72°57′14.9″	160°26′29.9″	19.1	1	H6	S3	W1	19	16.8	5	–	Sn1
FRO 03080	12/31/2003	72°59′16.0″	160°24′26.2″	2.05	1	H3	S2	W2	14–26	5–17	4.83	–	Sn1
FRO 03081	12/31/2003	72°59′19.9″	160°24′21.7″	42.9	1	H4	S1	W1	18.4	17.4	4.8	–	Sn1
FRO 03082	12/31/2003	72°59′43.1″	160°23′38.2″	3.16	1	H4–6	S2	W1	18.2	16	4.93	–	Sn1
FRO 03083	12/31/2003	72°59′43.7″	160°23′37.4″	8.25	1	H3–6	S2	W2	1–18	9–19	4.79	–	Sn1
FRO 03084	12/31/2003	72°59′43.7″	160°23′37.4″	2.51	1	H3–5	S2	W1	24-30	8–22	5.13	–	Sn1
FRO 03085	12/31/2003	72°59′41.2″	160°23′44.2″	19.51	1	H5	S1	W2	18.6	16.4	4.82	–	Sn1
FRO 03086	12/31/2003	72°57′24.1″	160°28′27.7″	14.96	1	H5	S1	W2	18.5	17.3	5.05	–	Sn1
FRO 03087	01/01/2004	72°57′40.8″	160°41′49.5″	8.76	1	H4	S4	W0	17.1	16.1	5.14	–	Sn1
FRO 03088	01/01/2004	72°57′51.6″	160°41′23.7″	16.07	1	H4	S4	W0	17.8	16	5.16	–	Sn1
FRO 03089	02/01/2004	72°59′38.2″	160°23′29.4″	5.6	1	H3/4	S1	W1	19.9	17.6	5.09	–	Sn1
FRO 03090	02/01/2004	72°59′42.1″	160°23′20.4″	6.1	1	L6	S5	W1	24.6	20.4	4.53	–	Sn1
FRO 03091	02/01/2004	72°59′39.2″	160°24′14.9″	0.7	1	H3	S1	W2	1–26	10–18	4.46	–	Sn1
FRO 03092	03/01/2004	72°57′05.2″	160°30′44.4″	2.29	1	H6	S4	W1	17.8	17.5	5.05	–	Sn1
FRO 03093	03/01/2004	72°57′05.2″	160°30′51.7″	0.85	1	L6	S3	W1	23.3	21	5.01	–	Sn1
FRO 03094	03/01/2004	72°57′05.8″	160°30′55.1″	0.21	1	H~5	–	–	–	–	5.25	–	Sn1
FRO 03095	03/01/2004	72°57′06.4″	160°30′35.9″	0.78	1	L6	S1	W1	23.8	20.8	4.51	–	Sn1
FRO 03096	03/01/2004	72°57′06.4″	160°30′35.9″	0.41	1	H~5	–	–	–	–	5.2	–	Sn1
FRO 03097	03/01/2004	72°57′08.0″	160°30′05.8″	0.74	1	H4	S2	W2	17.8	16.4	4.91	–	Sn1
FRO 03098	03/01/2004	72°57′08.2″	160°30′03.8″	0.95	1	H4	S4	W1	17.7	15.9	5.33	–	Sn1
FRO 03099	03/01/2004	72°57′08.2″	160°30′03.8″	17.16	1	H5	S4	W1	17.9	16.5	4.95	–	Sn1

[a]Abbreviations: br – brecciated; mbr – monomict breccia; pbr – polymict breccia.

Table 4. Meteorites from Grove Mountains, Antarctica.

Name	Date found (mm/dd/yyyy)	Latitude (S)	Longitude (E)	Mass (g)	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Comments	Info
Grove Mountains (GRV)											
GRV 020005	12/25/2002	73°05′51″	75°12′17″	0.4	CM2	–	–	–	–	See separate entry	NU
GRV 020010	12/26/2002	73°06′50″	75°06′18″	2.5	LL3	S1	W1	14.4–48.3	4.1–5.9	–	NU
GRV 020013	12/26/2002	73°06′12″	75°10′13″	7.4	LL4–6	S1	W1	28.3 ± 0.4	23.0 ± 2.9	–	CAS
GRV 020015	12/26/2002	73°07′17″	75°06′23″	10.1	CK4	–	–	–	–	See separate entry	CAS
GRV 020017	12/26/2002	73°05′47″	75°11′03″	2.2	CM2	–	–	–	–	See separate entry	CAS
GRV 020025	12/28/2002	73°04′39″	75°16′31″	3.6	CM2	–	–	–	–	See separate entry	CAS
GRV 020029	12/28/2002	73°04′14″	75°15′56″	39.6	L4	S1	W1	26.4 ± 0.7	21.7 ± 0.3	–	CAS
GRV 020039	12/28/2002	73°09′47″	75°03′17″	166.1	L5	S1	W2	24.5	21.1	–	NU
GRV 020047	01/01/2003	72°59′58″	75°13′41″	8.9	L5	S3	W1	24.3	20.4	–	CAS
GRV 020048	01/01/2003	73°00′01″	75°12′08″	8.5	H5	S1	W2	18.6	15.5	–	CAS
GRV 020075	02/01/2003	72°59′45″	75°12′24″	32.2	H6	S2	W2	18.5	16.5	–	CAS
GRV 020078	03/01/2003	73°00′50″	75°16′15″	20	H4	S2	W1	18.5 ± 0.4	16.4 ± 0.3	–	CAS
GRV 020079	03/01/2003	73°00′18″	75°16′20″	24.8	L5	S1	W1–2	25.4	22.2	–	NU
GRV 020082	03/01/2003	72°59′47″	75°13′01″	8.7	H5	S1	W1–2	18.7	18.5	–	NU
GRV 020090	04/01/2003	72°59′58″	75°15′40″	7.5	Martian	–	–	–	–	See separate entry	CAS
GRV 020099	06/01/2003	72°59′51″	75°12′15″	23.5	Pallasite	–	–	–	–	See separate entry	CAS
GRV 020103	06/01/2003	72°59′24″	75°15′42″	19.1	L6	S3	W2	24	20.9	–	CAS
GRV 020116	06/01/2003	72°58′45″	75°15′56″	123.6	L5	S2	W2	24.7	21.3	–	CAS
GRV 020129	06/01/2003	72°58′56″	75°15′57″	51.7	H5	S1	W2	18.4	16.2	–	CAS
GRV 020155	06/01/2003	72°58′38″	75°16′06″	612	L6	S1	W1	24.2	20.9	–	CAS
GRV 020158	06/01/2003	72°58′36″	75°16′15″	1101.8	L4	S1	W1	21.6 ± 4.4	17.9 ± 1.8	–	NU
GRV 020168	07/01/2003	72°58′41″	75°15′48″	11.5	H5	S2	W2	18.7	16.5	–	CAS
GRV 020200	08/01/2003	72°59′33″	75°12′23″	78.3	H5	S1	W2	18.3	16.3	–	CAS
GRV 020226	09/01/2003	72°59′30″	75°13′20″	16.5	H5	S1	W1	17.9	16.1	–	CAS
GRV 020236	09/01/2003	72°58′59″	75°13′45″	72.9	H5	S3	W1	17.59	16.6	–	CAS
GRV 020283	10/01/2003	72°59′02″	75°14′47″	18.6	L5	S3	W1	23.9	20.4	–	CAS
GRV 020297	10/01/2003	72°59′02″	75°14′47″	5	L5	S4	W2	23.8	20.8	–	CAS
GRV 021481	12/01/2003	72°56′07″	75°19′27″	17.2	H3	S1	W3	16.9 ± 6.4 (8.9–23.5)	15.6 ± 12.3 (7.8–29.8)	–	NU
GRV 021487	01/13/2003	72°56′32″	75°17′25″	80.6	H5	S2	W2	18.9	16.8	–	CAS
GRV 021488	01/13/2003	72°57′34″	75°18′37″	108.2	L5	S1	W1	24.6	22	–	NU
GRV 021493	01/13/2003	72°56′10″	75°18′32″	342.5	H4	S1	W1	17.6 ± 0.3	15.9 ± 0.2	–	CAS
GRV 021496	01/13/2003	72°56′30″	75°18′21″	3.6	LL6	S1	W1	31.6	26.2	–	CAS
GRV 021505	01/13/2003	72°56′55″	75°15′49″	91.3	L6	S1	W1	24.2	20.7	–	CAS
GRV 021509	01/13/2003	72°57′32″	75°16′48″	186.2	H5	S1	W2	20.2	18.3	–	NU
GRV 021512	01/13/2003	72°56′06″	75°19′07″	143.4	Ure	–	–	–	–	See separate entry	CAS
GRV 021547	01/14/2003	72°57′50″	75°13′20″	19.6	L5	S2	W1	24	20.3	–	CAS
GRV 021558	01/14/2003	72°56′05″	75°19′15″	25.4	L6	S2	W2	25.1	23.9	–	NU
GRV 021563	01/14/2003	72°56′04″	75°19′30″	7	L4	S3	W1	24.3 ± 0.7	20.6 ± 0.5	–	CAS
GRV 021579	01/14/2003	72°57′55″	75°12′55″	6.6	CO3	–	–	–	–	See separate entry	CAS
GRV 021581	01/14/2003	72°57′54″	75°13′13″	54.2	L5	S2	W1	24.5	20.5	–	CAS

Table 4. Meteorites from Grove Mountains, Antarctica. *Continued.*

Name	Date found (mm/dd/yyyy)	Latitude (S)	Longitude (E)	Mass (g)	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Comments	Info
GRV 021594	01/17/2003	72°49′38″	75°16′51″	108.9	L5	S1	W2	25	25.9	–	NU
GRV 021603	01/17/2003	72°49′22″	75°17′47″	4360	H3	S1	W1	14.6 ± 3.5 (2.3-16.2)	9.3 ± 5.5 (2.1–24.1)	–	CAS
GRV 021615	01/20/2003	72°46′25″	75°20′01″	4.7	L5	S4	W3	22.8	19.6	–	CAS
GRV 021710	01/20/2003	72°47′25″	75°17′36″	442.6	CR2	–	–	–	–	See separate entry	CAS
GRV 021711	01/20/2003	72°47′25″	75°17′37″	274.1	L6	S1	W1	23.6	20.3	–	CAS
GRV 021788	01/20/2003	72°46′24″	75°19′20″	24.9	Ure	–	–	–	–	See separate entry	NU
GRV 022021	01/20/2003	72°46′50″	75°19′01″	2953	LL5	S2	W2	26.1	21.4	–	NU
GRV 022171	01/20/2003	72°46′54″	75°18′10″	73	L6	S4	W2	23.9	20.2	–	CAS
GRV 022459	01/21/2003	72°46′26″	75°19′37″	1.1	CV	–	–	–	–	See separate entry	CAS
GRV 022931	01/22/2003	72°46′28″	75°19′11″	1.2	Ure	–	–	–	–	See separate entry	CAS
GRV 023771	01/02/2003	72°59′04″	75°15′00″	5.1	L5	S4	W2	23.4	20	–	CAS

Table 5. Meteorites from Pecora Escarpment, Antarctica.

Name	Date found (mm/yyyy)	Lat (S)	Long (W)	Mass (g)	Pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Comments	Info
Pecora Escarpment (PCA)												
PCA 01001	01/2002	85°39.966′	69°02.485′	19.5	1	LL5	S3	B	31.4	26.4	–	Ha6
PCA 01003	01/2002	85°41.116′	68°48.370′	2.7	1	Pallasite	–	B	–	–	See separate entry	Ha6
PCA 01004	01/2002	85°41.059′	68°47.542′	10.9	1	LL5	S3	B	27.6	24	–	Ha6
PCA 01006	01/2002	85°41.011′	68°48.045′	0.75	1	EL4	–	B	–	1.5	See separate entry	Ha6
PCA 01010	01/2002	85°41.174′	68°49.107′	8.9	1	LL5	S4	B	27.8	25.8	–	Ha6
PCA 01011	01/2002	85°40.500′	68°48.120′	3.75	1	L6	S4	B	21.1	19.9	–	Ha6
PCA 01013	01/2002	85°41.253′	68°53.532′	12.2	1	LL5	S4	B	27.3	22.4	–	Ha6
PCA 01014	01/2002	85°41.241′	68°53.186′	62.8	1	LL5	S4	B	26.8	25.9	–	Ha6
PCA 01017	01/2002	85°41.561′	68°58.310′	44.2	1	LL5	S4	B	27.7	22.6	–	Ha6
PCA 01031	01/2002	85°39.211′	68°39.064′	134.6	1	L5	S3	B	22	19.8	–	Ha6
PCA 01034	01/2002	85°41.096′	68°49.579′	67.6	1	L6	S4	B	24.9	21.8	–	Ha6

Table 6. Meteorites from Oman.

Name	Date found (mm/dd/yyyy)	Latitude (N)	Longitute (E)	Mass (g)	Pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Wo (mol%)	Comment	Type (g)	Type (MSU)	Info
Dhofar (Dho)															
Dho 457	03/04/2001	18°14.901′	54°00.096′	99.5	1	Lunar	–	–	–	–	–	Paired with Dho 026[a]	1.64	–	La15
Dho 458	03/04/2001	18°14.917′	54°00.145′	36.7	1	Lunar	–	–	–	–	–	Paired with Dho 026[a]	1	–	La15
Dho 459	03/04/2001	18°14.914′	54°00.202′	31.5	1	Lunar	–	–	–	–	–	Paired with Dho 026[a]	1.68	–	La15
Dho 460	10/04/2001	18°14.965′	54°00.436′	73.1	1	Lunar	–	–	–	–	–	Paired with Dho 026[a]	9.16	–	La15

Table 6. Meteorites from Oman. *Continued.*

Name	Date found (mm/dd/yyyy)	Latitude (N)	Longitute (E)	Mass (g)	Pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Wo (mol%)	Comment	Type (g)	Type (MSU)	Info
Dho 461	04/22/2001	18°14.682′	53°59.868′	33.7	1	Lunar	–	–	–	–	–	Paired with Dho 026[a]	3.03	–	La15
Dho 462	04/22/2001	18°14.800′	54°00.113′	44.7	1	Lunar	–	–	–	–	–	Paired with Dho 026[a]	1.97	–	La15
Dho 463	04/22/2001	18°14.808′	54°00.145′	24.3	1	Lunar	–	–	–	–	–	Paired with Dho 026[a]	2.85	–	La15
Dho 464	04/23/2001	18°14.976′	53°59.662′	22.3	1	Lunar	–	–	–	–	–	Paired with Dho 026[a]	1.17	–	La15
Dho 465	04/23/2001	18°14.833′	54°00.377′	70.7	1	Lunar	–	–	–	–	–	Paired with Dho 026[a]	2.58	–	La15
Dho 466	04/26/2001	18°14.814′	53°59.772′	69.2	1	Lunar	–	–	–	–	–	Paired with Dho 026[a]	2.17	–	La15
Dho 467	11/07/2001	18°15.226′	54°00.046′	36.2	1	Lunar	–	–	–	–	–	Paired with Dho 026[a]	1.17	–	La15
Dho 468	12/07/2001	18°15.390′	53°59.525′	18.9	1	Lunar	–	–	–	–	–	Paired with Dho 026[a]	0.91	–	La15
Dho 923	11/11/2002	19°20.1′	54°39.8′	190	1	H3.9	S4	W3	16.9–21.0	15.9–23.6	1.2	–	55		Vr1
Dho 937	09/11/2002	19°10.9′	54°34.7′	67	1	L5	S4	W1	25.4	21.9	1.6	–	14	7.5	Vr2
Dho 938	11/15/2002	19°24.3′	54°34.5′	1248	1	LL5	S2	W3/4	26.7	21.8	1.5	–	108	94	Vr2
Dho 939	12/11/2002	18°12.5′	54°07.2′	508	1	H5	S3	W2	18.2	17.3	1.3	–	219		Vr1
Dho 941	11/14/2002	18°34.9′	54°11.8′	74	1	L6	S2	W3	23.5	22	1.4	–	15	7	Vr2
Dho 942	11/15/2002	19°10.0′	54°24.2′	113	1	L5	S3	W3	24.6	22.5	1.4	–	24	16	Vr2
Dho 943	11/15/2002	19°03.1′	54°45.9′	166	1	L5	S1	W3	25.5	21.6	1.4	–	32	17	Vr2
Dho 944	11/16/2002	19°14.6′	54°32.2′	86	1	H5	S3	W3	18.2	16.4	1.6	–	20	18	Vr2
Dho 945	11/11/2002	19°05.7′	54°43.9′	74	1	H5	S2	W3	17.5	16.3	1.1	–	15	9	Vr2
Dho 946	11/15/2002	19°09.9′	54°24.2′	2412	1	LL5	S3	W1	27.8	22.9	1.6	–	384		Vr1
Dho 947	11/14/2002	18°21.2′	54°14.1′	170	1	L5–6	S3	W2	24.8	22.4	1.4	–	29	16	Vr2
Dho 948	11/15/2002	19°23.9′	54°35.7′	158	1	L5	S3	W3/4	23.9	21.6	1.7	–	83	17	Vr2
Dho 949	11/16/2002	19°07.5′	54°40.7′	38	1	H5	S2	W3/4	19.6	17.2	1.2	–	8	4	Vr2
Dho 950	11/11/2003	19°19.5′	54°46.9′	21.7	1	Lunar	–	–	–	–	–	See separate entry	4.8	–	Vr13
Dho 951	12/11/2002	18°37.9′	54°13.9′	274	1	H6	S2	W0/1	18.3	17.8	1.4	–	86.2	–	Vr1
Dho 952	10/11/2002	19°03.9′	54°45.7′	68	1	H6	S1	W2	17.4	17.3	1.8	–	16.2	–	Vr1
Dho 953	11/16/2002	19°08.1′	54°33.9′	45	1	H4	S2	W4	17.2	16.8	1.3	Possibly paired with Dho 927, Dho 1190	10.1	–	Vr5
Dho 954	11/14/2002	18°32.1′	54°08.0′	212	1	H4	S1	W2	17.6	16.4	1.2	–	55.2	–	Vr1
Dho 955	06/02/2003	19°03.3′	54°45.2′	16	1	CM2	–	–	–	–	–	See separate entry	4.3	–	Vr5
Dho 956	10/11/2002	19°13.0′	54°39.4′	114	1	L4	S2	W2	23.4	19.8	1.4	–	32.3	–	Vr1
Dho 957	11/15/2002	19°05.5′	54°23.2′	550	1	H4	S2	W2	17.9	15	0.6	–	191	–	Vr1
Dho 958	09/11/2002	19°05.1′	54°46.2′	400	1	H5	S2	W3	18.2	17	1.2	Probably paired with Dhofar 935	208	–	Vr1
Dho 959	08/11/2002	19°23.2′	54°34.6′	702	1	L6	S2	W2	24.2	20.3	1.7	–	140.5	–	Vr1
Dho 960	11/16/2003	19°23.8′	54°33.5′	35.4	1	Lunar	–	–	–	–	–	See separate entry	7.4	–	Vr4
Dho 961	12/11/2003	19°23.9′	54°33.8′	21.6	1	Lunar	–	–	–	–	–	See separate entry	4.8	–	Vr4
Dho 964	2004	19°07.56′	54°51.38′	1592	4	H4	S2	W4	18.5	16.6	–	–	23	–	NAU
Dho 965	2004	19°09′11.3″	54°57′36.6″	247	1	L6	S3	W1	25.3	20.8	–	–	23.5	–	NAU

Table 6. Meteorites from Oman. *Continued.*

Name	Date found (mm/dd/yyyy)	Latitude (N)	Longitute (E)	Mass (g)	Pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Wo (mol%)	Comment	Type (g)	Type (MSU)	Info
Dho 966	2004	19°11.53′	54°59.13′	868	17	L5	S3	W4	24.6	21.1	–	–	29.1	–	NAU
Dho 968	2004	19°17.8′	54°56′0.96″	79	1	H4	S1	W2	18.4	16.5	–	–	17.8	–	NAU
Dho 972	2004	19°23.11′	54°50.02′	8.1	1	H5	S2	W3	18.5	16	–	–	2.4	–	NAU
Dho 974	2004	19°14′03.8″	54°55′00.5″	79	1	LL4	S2	W2	26.1	23	–	–	50.8	–	NAU
Dho 977	2004	19°13′16.3″	54°57′34.6″	1728	1	H3	S1	W2	16.9–18.5	14.2–17.7	–	–	89	–	NAU
Dho 978	2004	19°13′43.6″	54°56′22.3″	2467	1	L4	S2	W2	23.4	20.1	–	–	30.5	–	NAU
Dho 979	2004	19°45.4′	54°56.2′	1063	1	Ure	S2	–	–	–	–	See separate entry		–	NAU
Dho 983	2004	19°10.27′	54°54.36′	82.6	1	H6	S3	W5	17.9	16.1	–	–	16.6	–	NAU
Dho 984	2004	19°11.84′	54°55.03′	33	1	H4	S2	W4	17.5	15.6	–	–	7.6	–	NAU
Dho 989	2004	19°14′03.8″	54°55′00.5″	608.5	1	H6	S2	W2	27.4	22.8	–	–	28.8	–	NAU
Dho 990	10/01/2004	19°15.19′	54°50.17′	165.3	1	H4	S2	W5	17.6 ± 0.4	–	–	Possibly paired with Dho 987	21.9	–	UCLA
Dho 991	2004	19°15.48′	54°50.14′	12	1	LL6	S3	W5	28.5	23	–	–	3.2	–	NAU
Dho 992	10/01/2004	19°19.07′	54°43.77′	213.9	1	L6	S3	W5	24.8 ± 0.4	–	–	–	31.61	–	UCLA
Dho 993	10/01/2004	19°13.49′	54°53.65′	114.5	1	H3.8	S1	W4	17.3 ± 0.1	–	–	–	25.59	–	UCLA
Dho 996	02/20/2003	19°9.819′	54°39.676′	2717	4	LL5	–	W2	29.6 ± 0.3	24.4 ± 1.9	1.53 ± 0.2	–	20.1	–	Vr 14
Dho 1113	2004	18°08.53′	54°05.81′	702	Many	H3	S2	W3	2.3–27.7	5.3	–	–	21.5	–	MNB
Dho 1190	11/16/2002	19°08.2′	54°33.8′	35	1	H4	S3	W3	18.3	18	1.3	Probably paired with Dho 927, 953	10.2	–	Vr5
Dho 1191	11/11/2003	19°20.4′	54°44.8′	174	1	L5	S2	W2	24.7	21.2	1.5	–	44.7	–	Vr1
Dho 1193	04/13/2004	18°51.49′	54°35.96′	14	–	H6	S3	W3	17.6	15.1	1.5	–	12	–	Vr6
Dho 1194	11/04/2004	19°1.006′	54°21.982′	124	1	H4	S1–2	W3	15.6	14.1 ± 1.6	1	–	46.6	–	Vr6
Dho 1195	04/18/2004	19°1.89′	54°22.41′	650	Many	H5	S3	W4	18.1	16.0 ± 4.5	0.1–1.1	–	220	–	Vr6
Dho 1196	04/13/2004	18°57.646′	54°22.624′	422	1	L6	S4	W2	24.4	21	1.4	CaPx:$Fs_{8.5}Wo_{42.5}$	148	–	Vr6
Dho 1197	12/04/2004	18°55.46′	54°21.84′	24	1	L6	S4–5	W3	23.1	19.8	1.7	CaPx:$Fs_{8.0}Wo_{36.1}$	10	–	Vr6
Dho 1221	2003	18°13.850′	54°05.400′	58	1	H5	S3	W1	19.7	17.2	–	–	12.5	–	MNHNP
Dho 1222	2003	18°12.25′	54°03.40′	93	1	Acap	–	–	–	–	–	See separate entry	19	–	MNHNP
Dho 1223	02/25/2004	18°45.645′	54°28.371′	81.4	3	R3	S2	W3–4	38 ± 9	17 ± 6	–	–	16	–	Mün
Dho 1224	09/28/2003	19°19.605′	54°46.507′	4.57	1	Lunar	–	–	–	–	–	See separate entry	1.19	–	UWS2
Dho 1275	06/02/2003	18°49.71′	54°38.37′	499	1	L7	S2	W4	24.8	21.1	3.6	See separate entry	59	–	Vr5
Jiddat al Harasis (JaH)															
JaH 054	01/15/2004	19°37.82′	55°06.91′	5079	52	Ure	–	–	–	–	–	See separate entry	640	–	Vr3
JaH 075	2004	19°14.78′	55°02.39′	107.6	1	H5	S2	W4	18.5	16.3	–	–	20.2	–	NAU
Ramlat as Sahmah (RaS)															
RaS 007	01/02/2004	20°10.2′	56°15.9′	420	1	Ure	–	–	–	–	–	–	63.8	–	Vr3
RaS 008	01/02/2004	20°43.679′	56°6.955′	466	1	L6	S1	W3	22.8	20.5	1.2	–	47.8	–	Vr3
RaS 009	09/04/2004	20°2.81′	56°29.01′	146	1	H5	S2	W2	17.8	15.6	0.9	–	32.3	–	Vr6
Sayh al Uhaymir (SaU)															
SaU 170	02/22/2004	20°57.96′	57°19.53′	570	Many	H5	S3	W4	17.7	15.3	–	–	236	–	Vr6
SaU 171	11/17/2002	21°00.8′	57°19.1′	745	1	H5	S2	W3	18.4	17.6	1.4	Probably paired with SaU 064	100	75	Vr2
SaU 172	11/17/2002	20°59.6′	57°16.8′	1913	1	H6	S4	W2	18.2	17.1	1.3	With impact melt	637	–	Vr1

Table 6. Meteorites from Oman. *Continued.*

Name	Date found (mm/dd/yyyy)	Latitude (N)	Longitute (E)	Mass (g)	Pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Wo (mol%)	Comment	Type (g)	Type (MSU)	Info
SaU 173	08/04/2004	21°3.31′	57°17.85′	690	1	L6	S4	W3	22.8	18.6	–	Possibly paired with SaU 067	170	–	Vr6
SaU 174	08/04/2004	21°3.867′	57°17.954′	207	1	L6	S4–5	W3	22.7	18.6	–	–	44	–	Vr6
SaU 175	01/02/2004	20°34.38′	56°42.154′	622	5	L6	S1	W2	23.7	21.2	1.2	–	27.5	–	Vr3
SaU 180	2004	20°32′53.4″	56°40′45.5″	556	1	L4	S2	W2	24.4	21.6	–	–	28.8	–	NAU
SaU 183	02/21/2003	20°10.572′	56°31.190′	38.5	3	H5	–	W4	18.3 ± 0.2	18.6 ± 1.6	1.47 ± 0.7	–	7.8	–	Vr14
Shişr 012	12/11/2002	18°33.7′	53°58.3′	802	1	H4	S2	W3	17.6	15.9	1.2	–	184	–	Vr1
Shişr 013	06/04/2004	18°29.5′	53°52.9′	120	1	EH3	S4	W1	0.4	1.6	0.7	$En_{97.7}$; Si in kamacite 2.1–2.5 wt%	26.3	–	Vr5
Shişr 014	04/14/2004	18°19.73′	53°53.16′	2579	2	L5	S3	W1	22.7	19.1	1.5	sv	104	–	Vr6

[a]Formal pairing under Nomenclature Committee guideline §4.2b. See Warren (2005).

Table 7. Meteorites from Africa (uncertain locations; numbered).

Name	Possible origin or pseudonym	Date found (mm/dd/yyyy)	Latitude (N)	Longitude (W)	Weight (g)	Pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Comment[a]	Place purchased	Type (g)	Info
Northeast Africa (NEA)															
NEA 001	Sudan	04/2002	–	–	262	1	Lunar	–	–	–	–	See separate entry	–	20	PCU1
Northwest Africa (NWA)															
NWA 484	–	P2000	–	–	98	1	H5	–	W1	19	–	–	Erfoud	20	MK2
NWA 774	Morocco	P2001	–	–	523	1	H4	–	W2	18	–	–	Tucson	20	MK2
NWA 775	Southern Morocco	P2001	–	–	1440	1	L6	–	W3	25	–	–	Tucson	20	MK2
NWA 903	–	2003	–	–	>529	Several	H3	S1	W3	14.85	–	–	Erfoud	28.9	Prato3
NWA 1052	Morocco	2001	–	–	22	1	Acap	–	–	–	–	See separate entry	Erfoud	4.7	Prato4
NWA 1054	Morocco	2001	–	–	86	1	Acap	–	–	–	–	See separate entry	Erfoud	17.9	Prato3
NWA 1329	–	P2000	–	–	465	1	H4	–	W2	19	–	–	Morocco	20	MK2
NWA 1337	–	P2000	–	–	92	1	L3.9	–	W3	18	–	–	Morocco	20	MK2
NWA 1356	–	P2000	–	–	76	1	H5	–	W1	19	–	–	Morocco	15	MK2
NWA 1390	–	P10/2000	–	–	270	1	H3.8	–	W1	8.2–18.1	–	br, 3–6	Morocco	20	MK2
NWA 1392	–	P10/2000	–	–	1091	3	L6	–	W4	25	–	–	Morocco	20	MK2
NWA 1392	–	P10/2000	–	–	64	1	H5	–	W1	18	–	–	Morocco	13	MK2
NWA 1395	–	P10/2000	–	–	734	1	H3.8	–	W1	19	–	–	Morocco	20	MK2
NWA 1397	–	P10/2000	–	–	40000	1	L/LL6	–	W3	24–27	–	–	Morocco	20	MK2
NWA 1406	–	P2001	–	–	682	1	LL3	–	W2	85–1	–	56 analyses	Morocco	20	MK2
NWA 1429	–	P2001	–	–	62.6	1	L3	–	W1	65–1	–	–	Morocco	13	MK2
NWA 1628	–	2003	–	–	18.2	1	CK	S4–6	W2	–	–	See separate entry	Rissani	7.8	NAU
NWA 1665	Morocco	2002	–	–	1185	1	CK3 anomalous	–	–	–	–	See separate entry	–	22	Be2
NWA 1696	Morocco	2002	–	–	213	1	L3-6	S1–3	W1	25.9 ± 0.7 PMD = 4.2	21.65 ± 0.4 PMD = 1.7	$Wo_{1.6 \pm 0.1}$	Rissani	25	Asu1
NWA 1697	Morocco	2002	–	–	3000	1	L5	S4	W1	23.9 ± 0.6 PMD = 2.3	19.9 ± 0.4 PMD = 1.8	–	Rissani	50	Asu1
NWA 1809	–		–	–	214	1	LL6	S2	W2	23.5	30.3	–	–	20.7	Prato3
NWA 1834[b]	–	2002	–	–	20.2	1	Ure	S2	W1	12	12	–	Morocco	4.2	NAU
NWA 1835[b]	–	2002	–	–	28.8	1	Euc	S4	W1	–	42–52.4	Plag $An_{92.1–94.4}$	Morocco	5.7	NAU

Table 7. Meteorites from Africa (uncertain locations; numbered). *Continued.*

Name	Possible origin or pseudonym	Date found (mm/dd/yyyy)	Latitude (N)	Longitude (W)	Weight (g)	Pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Comment[a]	Place purchased	Type (g)	Info
NWA 1836[b]	–	2002	–	–	1102	1	Euc	S	W0	–	56.4–59	Plag $An_{91–93.6}$	Morocco	25.5	NAU
NWA 1837	–	2003	–	–	45	1	H4	S2	W1	17.9	16.1	–	Erfoud	9	NAU
NWA 1838	–	2003	–	–	22.1	1	L3	S1	W1	24.9	21.1	–	Erfoud	4.6	NAU
NWA 1839	–	2003	–	–	121.8	1	L7	–	–	–	–	See separate entry	–	20.1	NAU
NWA 1840	–	2003	–	–	132.8	1	Enstatite achondrite	–	–	–	–	See separate entry	–	21.1	NAU
NWA 1841[b]	–	2003	–	–	32.3	1	Ure	–	1	0.8–21.8	18.3	–	Morocco	8.4	NAU
NWA 1842	–	2003	–	–	70.5	1	L4	S2	W2	23.6	21.6	–	Erfoud	14.1	NAU
NWA 1852	Eastern Morocco	Fall/Winter 2002	–	–	222.6	1	H4	S1	W5	18.8 ± 0.2		–	–	21.1	UCLA
NWA 1853	Eastern Morocco	2002	–	–	104.1	1	H3	S1	W2	17.4 ± 0.4	–	–	–	26	UCLA
NWA 1854	Eastern Morocco	2002	–	–	316	1	H3	S1	W5	17.3 ± 0.4	–	–	–	39.4	UCLA
NWA 1855	Eastern Morocco	2002	–	–	282	1	LL3	S4	W3	23.5 ± 12.9	–	–	–	35.8	UCLA
NWA 1856	Eastern Morocco	2002	–	–	70.8	1	H6	S2	W2	18.9 ± 0.2	–	–	–	16.12	UCLA
NWA 1857	Eastern Morocco	2002	–	–	316	1	L6	S4	W2	24.5 ± 0.3	–	–	–	20.88	UCLA
NWA 1952	Morocco	2001	–	–	636	1	L6	S3	W5	26.6	–	–	Rissani	20	UCLA
NWA 1955	Morocco	2002	–	–	2000	Several	H/L3–4	–	–	20.6	20.44	$Wo_{1.2}$	Rissani	25	Ha3
NWA 1957	–	2002	–	–	6593	Several	L5	S1	W2	24.7 ± 0.5	20. 5± 0.4	$Wo_{1.3 \pm 0.3}$		92.6	Asu1
NWA 1958	–	01/2003	–	–	244	2	L6	S4	W3	26	22	sv, calc.v.	Rissani	22	Mün3
NWA 1959	–	01/2003	–	–	209	1	LL6	S3	W1	29	24	sv, calc.v.	Rissani	23	Mün3
NWA 1960	–	01/2003	–	–	206	1	H5	S2	W2–3	18	16	–	Rissani	24	Mün3
NWA 1961	–	01/2003	–	–	288	3	Mes	S2	W0/1	1 grain: 36.0	32.0 ± 2.0	$An_{90 \pm 2}$	Rissani	21	Mün3
NWA 1962	–	01/2003	–	–	150	1	H5/6	S4	W1	19	17	sv	Rissani	23	Mün3
NWA 1963	–	01/2003	–	–	146	1	L6	S2	W1	25	21	–	Rissani	23	Mün3
NWA 1964	–	01/2003	–	–	140	1	L6	S2	W2–3	24	20	–	Rissani	20	Mün3
NWA 1965	–	01/2003	–	–	118	1	H3–5	S2	W3	16.5 ± 8	13.5 ± 5.5	br	Rissani	21	Mün3
NWA 1966	–	01/2003	–	–	85.5	4	Euc	S2	W2	2 grains: 26; 28	42 ± 13	$An_{84–97}$; pbr	Rissani	17	Mün3
NWA 1967	–	01/2003	–	–	82.9	1	L6	S4	W1	25	21	sv	Rissani	17	Mün3
NWA 1968	–	01/2003	–	–	80.4	1	L6	S3	W0/1	25	21	sv	Rissani	18	Mün3
NWA 1969	–	01/2003	–	–	74.4	1	L6	S2	W1	25	21	–	Rissani	17	Mün3
NWA 1970	–	01/2003	–	–	68.5	1	H5/6	S2	W3	18.5	16	–	Rissani	15	Mün3
NWA 1971	–	01/2003	–	–	66.2	1	L6	S4	W1	25	21	–	Rissani	14	Mün3
NWA 1972	–	01/2003	–	–	64.2	1	LL5–6	S4	W2	30	24.5	br, sv, fragments of impact melt br	Rissani	17	Mün3
NWA 1973	–	01/2003	–	–	57.2	1	L6	S4	W1	25	21	sv, partly S5	Rissani	13	Mün3
NWA 1974	–	01/2003	–	–	39.1	1	LL4/5	S2	W2–3	28	23	–	Rissani	8	Mün3
NWA 1975	–	01/2003	–	–	28.4	1	L6	S3	W1	25	21	–	Rissani	6	Mün3
NWA 1976	–	06/2003	–	–	65.7	1	L(H)3	S2	W3	14.5 ± 8	11 ± 8	–	Ensisheim	14	Mün3
NWA 1977	–	06/2003	–	–	69.1	1	Euc	S4	W1–2	–	61.1 ± 1.5	$An_{84–93}$; mbr	St. Marie	14	Mün3
NWA 2020	Morocco/ Algeria	02/2002	–	–	94.2	1	L5	–	W1	24.7	21.7	–	Hamburg	20.5	Bart2
NWA 2033	Morocco/ Algeria	06/2003	–	–	16500	1	L/LL4	–	W1	25.9	22	–	Ste. Margarite	20.2	Bart3

Table 7. Meteorites from Africa (uncertain locations; numbered). *Continued.*

Name	Possible origin or pseudonym	Date found (mm/dd/yyyy)	Latitude (N)	Longitude (W)	Weight (g)	Pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Comment[a]	Place purchased	Type (g)	Info
NWA 2037[b]	–	2002	–	–	8.4	1	Dio	–	–	–	22.3–22.6	Plag: $An_{84.3}Or_{0.3}$ to $An_{88.8}Or_{0.1}$	Erfoud	1.7	UWS
NWA 2038[b]	–	2002	–	–	800	1	Dio	–	–	–	24.2–24.3	FeO/MnO = 26.2–30.3	Erfoud	20	UWS
NWA 2042	Morocco	10/2003	–	–	700	1	Mes	–	–	–	–	See separate entry	Erfoud	20	UWS
NWA 2045	–	2003	–	–	19	1	LL3	S2	W3	29.8–43.7 Mean = 35.6	Mean = 24.9	Olivine data suggest subtype 3.8/3.9	Erfoud	3.7	Prato3
NWA 2055	–	–	–	–	148	1	H4	S2/3	W1	18.0–18.4	16.6–17		Zagora	21	NAU
NWA 2056	–	–	–	–	1447	1	L4	S3	W2	20.4–23.6	20.8	Melt clasts; 5 mm FeS rimmed by NiFe	Erfoud	20.3	NAU
NWA 2057	–	–	–	–	958	1	H4	S2	W2	18.4	16.3	–	Erfoud	21	NAU
NWA 2069	–	2003	–	–	44.9	1	R	S2	W3	39.1	–	–	Erfoud	23.2	NAU
NWA 2070	–	2002	–	–	90	1	H4	S5	W1	18.6	16.5	Shock darkened	Erfoud	18.8	NAU
NWA 2071	–	2002	–	–	816	1	H4	S1	W1	17.9	16.2	–	Erfoud	22.4	NAU
NWA 2072	–	2002	–	–	1	1	L5	S3	W2	23.5	20.8	–	Erfoud	26.7	NAU
NWA 2073	–	2002	–	–	8.1	1	H4	S2	W1	18.1	16	–	Erfoud	8.1	NAU
NWA 2074	–	2002	–	–	174	1	L5	S2	W2	23.4	20.8	–	Erfoud	22.2	NAU
NWA 2075	–	2002	–	–	484	1	L4	S1	W2	24.6	21.4	–	Erfoud	20.4	NAU
NWA 2076	–	2002	–	–	338	1	L5	S3	W2	25.5	22	–	Erfoud	24.2	NAU
NWA 2077	–	2002	–	–	1	1	H4	S2	W2	18.3	16.5	–	Erfoud	21.8	NAU
NWA 2078	–	2003	–	–	34.8	1	H5	S2	W1	18.5	16.7	oriented, disk-shaped	Erfoud	8.1	NAU
NWA 2081[b]	–	10/2003	–	–	114	2	Dio	–	W0	6.9	23.3	mbr	Rissani	22.2	NAU
NWA 2082[b]	–	10/2003	–	–	33	1	Ure	–	–	4–17.8	15.6–10.1	–	Rissani	8.5	NAU
NWA 2083	–	10/2003	–	–	144	1	CO3	S1	W2	3.8–57.6	–	–	Rissani	24.5	NAU
NWA 2084	–	10/2003	–	–	786	1	LL3.8	S2	W2	29.7	24.2	–	Rissani	28.8	NAU
NWA 2085	–	10/2003	–	–	2700	1	L	S6	–	22.8	–	melt rock; see separate entry	Rissani	88.5	NAU
NWA 2086	–	11/2003	–	–	780	Many	CV3	S1	W1	1.8–41	3–35.5	–	Rissani	28.1	NAU
NWA 2087	–	11/2003	–	–	35.1	1	H5	S2	W1	18.8	16.6	$Wo_{2.1}$	Rissani	7.6	NAU
NWA 2088[b]	–	11/2003	–	–	252	1	Ure	S3	W2	7.8–10.3	9.1	$Wo_{7.3}$	Rissani	22.7	NAU
NWA 2089	–	11/2003	–	–	429	1	LL3	S2	W2	27.6	23.4	Chromite; Cr/(Cr + Al) = 1.0	Rissani	42	NAU
NWA 2090	–	11/2003	–	–	875	1	CO3	S1	W1	12.2–53.2	–	–	Rissani	40	NAU
NWA 2091	–	11/2003	–	–	580	1	LL4	S2	W2	29.1	24.4	–	Rissani	47.5	NAU
NWA 2092	–	11/2003	–	–	320	1	LL6/7	S3	W1	30.9	24.7	–	Rissani	25.7	NAU
NWA 2110	–	2003	–	–	28	1	CV3	S2	W4	1.7–39.6	–	–	Erfoud	2.4	NAU1
NWA 2111	–	2003	–	–	984	1	L4	S2	W2	23.7	20.6	–	Erfoud	27.8	NAU1
NWA 2112[b]	–	2003	–	–	67	1	Euc	S2	W1	–	46.5	Augite $Fs_{26}Wo_{34.2}$; plag An_{91}	Erfoud	14.4	NAU8
NWA 2114	–	2003	–	–	89	1	L3.9	S2	W1	20.4–25.1	–	–	Erfoud	20.4	NAU1
NWA 2152	Morocco	01/2004	–	–	226	1	L5	S4	W2	24.2	20.1	–	–	24.7	Be8
NWA 2153	Morocco	01/2004	–	–	353	1	L6	S4	W1	24.1	20.2	sv	–	24.9	Be8
NWA 2154	Morocco	01/2004	–	–	233	1	LL6	S4	W2	30.5	24.9	–	–	22.6	Be8
NWA 2155	Morocco	01/2004	–	–	35.8	1	L6	S4	W1	23.7	20.2	–	–	7.2	Be8
NWA 2156	Morocco	01/2004	–	–	27	1	L6	S3	W0	23.9	20.1	–	–	5.5	Be8
NWA 2157	Morocco (Desert)	04/2003	–	–	114.6	1	H5	S2	W4	18.4	16.4	–	–	33.5	FSAC 1

Table 7. Meteorites from Africa (uncertain locations; numbered). *Continued.*

Name	Possible origin or pseudonym	Date found (mm/dd/yyyy)	Latitude (N)	Longitude (W)	Weight (g)	Pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Comment[a]	Place purchased	Type (g)	Info
NWA 2158	Morocco (Desert)	04/2003	–	–	9.6	1	L5	S2	W2	25.5	22	–	–	3.2	FSAC 1
NWA 2159	Morocco (Desert)	04/2003	–	–	89	1	L5	S3	W2	25	21.8	–	–	32.6	FSAC 1
NWA 2160	Morocco (Desert)	04/2003	–	–	31.3	1	L5	S3	W2	25.5	21.9	Possibly paired with NWA 2159	–	9.6	FSAC 1
NWA 2161	Morocco (Desert)	04/2003	–	–	569.9	1	LL4	S2	W4	28.1	23.2	–	–	129.9	FSAC 1
NWA 2162	Morocco (Desert)	04/2003	–	–	417.2	1	H5	S1	W4	18.5	16.3	–	–	22	FSAC 1
NWA 2164	Morocco (Desert)	04/2003	–	–	63.5	1	L5	S3	W1	24.7	21.4	–	–	16.3	FSAC 1
NWA 2165	Morocco (Desert)	04/2003	–	–	57.1	1	L5/6	S4	W3	25	18.9	–	–	11.9	FSAC 1
NWA 2167	Morocco (Desert)	04/2003	–	–	54.9	1	L5	–	W4	26	22.6	–	–	14.4	FSAC 1
NWA 2168	Morocco (Desert)	04/2003	–	–	18.4	1	H4	–	W4	18.3	16.1	–	–	4.1	FSAC 1
NWA 2169	Morocco (Desert)	04/2003	–	–	5.4	1	H5/6	–	W4	18.2	16.4	br	–	1.6	FSAC 1
NWA 2170	Erfoud	05/2003	–	–	480.3	1	LL6	S2	W1	25.4	22.6	–	–	24.2	FSAC 2
NWA 2171	Erfoud	05/2003	–	–	13.5	Many	L3.8	S4	W1	24.0 (20–26)	20.9	br, possibly paired with Sahara 02500	–	12.6	FSAC 2
NWA 2173	Morocco (Desert)	06/2001	–	–	13 kg	Many	LL6	S3	W2	27.2	23.7	–	–	25.49	UPVI
NWA 2174	Morocco (Desert)	06/2001	–	–	300	3	LL5	S1	W4	25.6	21.8	–	–	23.48	UPVI
NWA 2175	Morocco (Desert)	06/2001	–	–	700	1	L5	S2	W2	24.2	20.7	br	–	29.01	UPVI
NWA 2179	Northwest Africa	2003	–	–	367.2	Several	H3	S1	W2	0.8–18.4 Mean = 6.7	6.1–21.0	–	Erfoud	29.4	Prato3
NWA 2181	–	10/25/2002	–	–	448	1	L6	S3	W3	26	21.5	sv	Munich	21	Mün3
NWA 2182	–	10/25/2002	–	–	104	1	H5/6	S2	W1	17.5	15.5	–	Munich	19.5	Mün3
NWA 2183	–	10/25/2002	–	–	56	1	H3–5	S2	W1–2	19 ± 2	16.5	br	Munich	11	Mün3
NWA 2184	–	10/26/2002	–	–	83	1	H3–5	S2	W1	18.5 ± 1.5	13.5 ± 4.5	br, sv	Munich	17	Mün3
NWA 2185	–	10/25/2002	–	–	96	1	H4	S2	W2	17	15	–	Munich	21	Mün3
NWA 2186	Touz	2002	–	–	316	1	H5/6	S1	W2	18	16	–	St. Marie	24	Mün3
NWA 2187	–	2002	–	–	308	1	CO3	S2	W1	18 ± 18	4 ± 2	–	St. Marie	25	Mün3
NWA 2188	Morocco	Unknown	–	–	129	1	H4	S2	W3–4	17.5	15 ± 1.5	calc.v.	Morocco	29	Mün3
NWA 2189	Boudnib (find)	2002, found	–	–	32	1	LL4–6	S2	W3	29.5	24	br, sv, calc.v.	Morocco	6.5	Mün3
NWA 2193	–	–	–	–	785	1	L6	S3	W3	24.4	–	–	–	21	UCLA
NWA 2195	–	–	–	–	152.5	1	LL3.6	S2	W4	17–29	–	–	–	21	UCLA
NWA 2196	–	–	–	–	141.7	1	CR2	S1	W5	1.0–2.4	–	–	–	24.1	UCLA
NWA 2197	–	01/2002	–	–	293	1	LL3.7	S2	W3	9.0–23.0	–	–	Erfoud	20	UCLA
NWA 2198	–	01/2002	–	–	38	1	R4	S2	W1	38.5	–	–	Erfoud	8	UCLA
NWA 2199	–	01/2002	–	–	2000	1	H	S6	W2	18.6	–	Melt breccia	–	20	UCLA
NWA 2226	–	–	–	–	1004	1	How	–	W1	–	26–51; peak: 36	$An_{91 \pm 2}$	Erfoud	30	Mün7
NWA 2227	–	–	–	–	302	1	Euc	–	W3	–	45–58	Impact melt br; An: 84–95	Erfoud	40	Mün7

Table 7. Meteorites from Africa (uncertain locations; numbered). *Continued.*

Name	Possible origin or pseudonym	Date found (mm/dd/yyyy)	Latitude (N)	Longitude (W)	Weight (g)	Pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Comment[a]	Place purchased	Type (g)	Info
NWA 2233[b]	–	2003	–	–	167	1	Ure	–	–	20.3	76.4	Rare metal: 2.25% Ni, Ni/Co 7.2	–	20.5	Vern
NWA 2251	Tindouf, Algeria	10/2001	27°58′	7°57	17	1	How	–	–	–	43–53	See separate entry	–	16	Pa14
NWA 2252	Algeria	04/04/2002	27°49′	7°51	65	1	H6	S1	W3	19.5	16.5	–	–	20.89	Pa14
NWA 2253	Algeria	01/11/2000	28°10′	7°54′	80.5	1	L4	S2	W1	25	22	–	–	25.5	Pa14
NWA 2254	Algeria	01/02/2000	28°12′	7°45′	129.5	1	L5	S3	W3	23.5	22	–	–	23.6	Pa14
NWA 2255	Algeria	01/16/2001	27°56′	7°47′	110.7	1	L5	S4	W4	25	24	–	–	23.7	Pa14
NWA 2256	Algeria	01/07/2001	27°46′	7°40′	215.4	1	H5	S4	W2	18	16	–	–	26.3	Pa14
NWA 2257	Algeria	01/10/2001	28°30′	7°54′	47.9	1	L6	S3	W2	24	20	–	–	24.2	Pa14
NWA 2258	Algeria	01/11/2001	28°35′	7°58′	57.4	1	L6	S3	W2	24.5	20	–	–	20.4	Pa14
NWA 2259	Algeria	01/06/2001	28°36′	7°59′	485	1	H5	S4	W4	18.5	17.5	–	–	28.4	Pa14
NWA 2260	Algeria	01/11/2001	27°56′	7°54′	59.3	1	L5	S3	W2	24	20.5	–	–	21.5	Pa14
NWA 2261	Algeria	01/09/2002	27°44′	7°51′	61.8	1	L6	S3	W4	24.7	20.6	–	–	20.6	Pa14
NWA 2262	Algeria	01/10/2001	27°48′	7°57′	139	1	L6	S4	W3	25	21.5	–	–	26.7	Pa14
NWA 2263	Algeria	01/01/2002	27°49′	7°50′	135	1	L6	S4	W3	25.5	24	–	–	24.6	Pa14
NWA 2264	Algeria	01/05/2002	27°55′	7°30′	40.2	1	L6	S4	W3	25	23.5	–	–	20.2	Pa14
NWA 2265	Algeria	01/04/2001	28°40′	7°32′	40	1	L3.8	S3	W1	24 ± 10	24.5 ± 14	–	–	20.4	Pa14
NWA 2266	Algeria	01/03/2001	28°45′	7°35′	33.9	1	L3.8–6	S3	W1	24.5 ± 8	23 ± 13	br	–	21.1	Pa14
NWA 2267	Algeria	01/09/2002	28°06′	7°31′	24.5	1	L3.8	S2	W1	25 ± 11	18 ± 6	–	–	18.2	Pa14
NWA 2268[b]	Algeria	09/2002	28°14′	7°53′	65	1	Euc	–	–	71	16–61	Plag $An_{85–94}$; $\Delta^{17}O = –0.4‰$	–	20.8	MNHNP
NWA 2269	Algeria	10/2001	27°58′	7°57′	184	1	CV3	–	–	–	–	See separate entry	–	23.6	MNHNP
NWA 2271	Morocco	2003	–	–	434	1	L6	S6	W0	23	19.5	Partly melt rock	–	24.3	Be5
NWA 2272	Morocco	2003	–	–	22	1	L3	S2	W1	12.2 (0.4–28.1)	6 (1.7–17.1)	–	–	5.6	Be5
NWA 2273	Morocco	2003	–	–	39	1	H6	S2	W3	18.1	15.9	–	–	9.6	Be5
NWA 2274	Morocco	2003	–	–	15	1	L6	S4	W1/2	23.5	19.8	–	–	5.8	Be5
NWA 2275	Morocco	2003	–	–	164	1	H5/6	S2	W2	17.2	15.4	–	–	20.6	Be5
NWA 2276	Morocco	2003	–	–	410	1	L6	S6	W1/2	23	19.8	Partly melt rock	–	24.4	Be5
NWA 2277	Morocco	2003	–	–	1694	1	H4	S2	W3	16.9	15.4	–	–	24.9	Be5
NWA 2278	Morocco	2003	–	–	62	1	L6	S4	W3/4	23.4	20.5	–	–	15.2	Be5
NWA 2279	Morocco	2003	–	–	85	1	Ure	S0/1	W2/3	14.2 (4.5–21.4)	14.6 (6.6–18.2)	–	–	17.8	Be5
NWA 2280	Morocco	2003	–	–	147	1	L6	S5	W2	23.7	20.2	–	–	22	Be6
NWA 2282	Mauretania	2003	–	–	155	1	L6	S6	W3	22.2	18.3	Partly melt rock	–	23.1	Be6
NWA 2283	Morocco	2003	–	–	106	1	L6	S4	W2	23.3	20.1	–	–	20.5	Be6
NWA 2284	Morocco	2003	–	–	45.9	1	L5/6	S4	W3	22.5	19.6	–	–	9.4	Be6
NWA 2285	Morocco	2003	–	–	126	1	L6	S6	W0	20.3	17.4	Partly melt rock	–	21.3	Be6
NWA 2286	Morocco	2003	–	–	82	1	Dio	Mod.	–	26.8	21.9	See separate entry	–	23.5	Be6
NWA 2287	Morocco	2003	–	–	49.8	1	L6	S4	W1	25.9	20.8	–	–	11	Be6
NWA 2288	Morocco	2003	–	–	150	1	L3	S3	W2	1–35.3	1.9–28.5	–	–	24.4	Be6
NWA 2289	Morocco	2003	–	–	160	1	R3–6	–	–	–	–	See separate entry	–	20.7	Be6
NWA 2290	Morocco	2003	–	–	134	1	LL6	S3	W2	29.3	24.1	br	–	24	Be6
NWA 2291	Morocco	2003	–	–	300	1	L/LL3	S3	W2	19.1 (2.7–25.6)	7. (0.4–18)	–	–	24.1	Be6
NWA 2292	Morocco	2003	–	–	350	1	H4	S2	W3	17.5	15.9	–	–	25	Be6
NWA 2293	Morocco	2003	–	–	107	1	L4	S4	W2	23	19.5	–	–	21.6	Be6

Table 7. Meteorites from Africa (uncertain locations; numbered). *Continued.*

Name	Possible origin or pseudonym	Date found (mm/dd/yyyy)	Latitude (N)	Longitude (W)	Weight (g)	Pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Comment[a]	Place purchased	Type (g)	Info
NWA 2294	Morocco	2003	–	–	984	1	H3	S2	W1	19.4 (2.5–24.2)	13.7 (6–19.9)	–	–	20	Be7
NWA 2295	Morocco	2003	–	–	858	1	L6	S4	W1	23.2	19.8	–	–	20.1	Be7
NWA 2296	Morocco	2003	–	–	3600	1	L6	S4	W1	23.6	20.4	–	–	23.3	Be7
NWA 2297	Morocco	2003	–	–	1635	1	L6	S4	W2	23.2	19.6	sv	–	22.6	Be7
NWA 2298	Morocco	2003	–	–	474	1	L6	S4	W2	22.9	19.6	–	–	23	Be7
NWA 2299	Morocco	2003	–	–	3826	1	L5/6	S4	W1	23.1	19.7	–	–	31.8	Be7
NWA 2300	Morocco	2003	–	–	144	1	L3	S3	W0/1	13.6–24.4	6.2–20.5	–	–	22.1	Be7
NWA 2301	Morocco	2003	–	–	167	1	L3	S3	W1	2.5–27	2.3–20.5	–	–	21.6	Be7
NWA 2302	Morocco	2003	–	–	50.9	1	H5	S3	W3	16.3	14.8	–	–	13.1	Be7
NWA 2303	Morocco	2003	–	–	3435	1	L6	S4	W1	23.5	19.8	–	–	27.8	Be7
NWA 2304	Morocco	2003	–	–	7500	1	L5/6	S4	W2	23.3	19.7	–	–	20.4	Be2
NWA 2305	Mauretania	2003	–	–	940	1	L5/6	S2	W1	23	19.6	–	–	22.2	Be2
NWA 2306[b]	Western Sahara	2002	–	–	18	1	Euc	–	–	–	29.7–58.5	$Wo_{6.5–40.3}$; Plag $An_{83–91.5}$	–	3.7	Be2
NWA 2307[b]	Morocco	2004	–	–	1905	1	Euc	–	–	–	23.1–55	$Wo_{6.3–43.9}$; Plag $An_{81.3–94.9}$	–	44	Be8
NWA 2350	–	–	–	–	141.5	1	H4	S1	W1	16.6	18.6	–	–	20.3	Prato3
NWA 2351	–	2003	–	–	189	1	L4	S3	W2–3	24.6–25.9	22.3	Partly melted	Erfoud	14.2	NAU2
NWA 2352[b]	–	2004	–	–	302	1	Ure	–	–	10.7–11.9	–	Pigeonite $Fs_{11}Wo_{9.4}$; $\Delta^{17}O = -1‰$	Erfoud	21.1	NAU3
NWA 2353	–	2004	–	–	315	1	Achond ung	–	–	–	–	See separate entry	Erfoud	–	NAU3
NWA 2354	–	2002	–	–	727	1	H5	S3	W2	19.6	17	–	Erfoud	21	NAU1
NWA 2355	–	2002	–	–	286	1	LL5	S4	W2	29.3	23.8	–	Erfoud	20.8	NAU1
NWA 2356[b]	–	2004	–	–	53	1	Euc	–	–	–	37.1–43.1	Plag $An_{88.9–92.1}$	Erfoud	11.2	NAU4
NWA 2357	–	2002	–	–	427	1	L4	S5	W1	23.8	21.7	Shock darkened	Erfoud	22	NAU1
NWA 2358	–	2002	–	–	328	1	L4	S5	W1	24.8	22.1	Shock darkened	Erfoud	20.2	NAU1
NWA 2359[b]	–	2004	–	–	1298	1	Euc	–	–	–	54.6	Plag $An_{91.5}$; Pigeonite $Fs_{46.4}Wo_{12.5}$	Erfoud	21.1	NAU4
NWA 2360	–	2004	–	–	56	1	LL6	S3–4	W4	28.6	23.2	Shock darkened	Erfoud	13	NAU1
NWA 2361	–	2002	–	–	263	1	L5	S4	W2	23.7	21.4	Shock darkened	Erfoud	21.5	NAU1
NWA 2362[b]	–	2004	–	–	252	1	Euc	–	–		59.3–62.9	Plag $An_{89.2}$	Erfoud	22	NAU5
NWA 2363	–	2004	–	–	120	1	L5	S3–5	W1	25.7	21.3	Shock darkened	Erfoud	22.1	NAU1
NWA 2364	–	2004	–	–	1493	18	CV3	S2	W4	36.1–48.4	–	Allende-like matrix	Erfoud	24.2	NAU1
NWA 2365	–	2004	–	–	258	1	LL6	S3	W2	30.9	25	–	Erfoud	28	NAU1
NWA 2366[b]	–	2004	–	–	1239	4	Euc	–	–	–	–	56.4; 43.9; 59.0 $An_{81.6}$; pbr	Erfoud	28	NAU5
NWA 2367	–	2004	–	–	168	1	L4	S5	W2	22.2	19	shock darkened	Erfoud	21	NAU1
NWA 2368	–	2004	–	–	170	1	LL3.9	S2	W1	26.8–32.4	–	–	Erfoud	21.4	NAU1
NWA 2369	–	2004	–	–	220	6	LL3.8	S2	W1	19.1–31.6	–	Some chondrules >1 cm	Erfoud	22.8	NAU1
NWA 2370	–	2004	–	–	227.2	1	L4	S2	W1	23.9	20.5	–	Erfoud	24.8	NAU1
NWA 2371	–	2003	–	–	2950	1	H4	S2	W2	19.5	17	–	Erfoud	38	NAU1
NWA 2372	–	2004	–	–	440	1	CK4	S2	–	–	–	See separate entry	Erfoud	28	NAU6
NWA 2373	–	2004	–	–	18	1	Martian	–	–	–	–	See separate entry	Erfoud	3.7	NAU5
NWA 2374[b]	–	2004	–	–	31	1	Ure	–	–	12.9–21.0	–	–	Erfoud	6.7	NAU5
NWA 2375	–	2004	–	–	544	1	L5	S5	W2	23.7	20.1	Shock darkened	Erfoud	29.2	NAU1

Table 7. Meteorites from Africa (uncertain locations; numbered). *Continued.*

Name	Possible origin or pseudonym	Date found (mm/dd/yyyy)	Latitude (N)	Longitude (W)	Weight (g)	Pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Comment[a]	Place purchased	Type (g)	Info
NWA 2376[b]	–	2004	–	–	123	1	Ure	–	–	1.2–12.3	–	Pigeonite $Fs_{10.9}Wo_{5.2}$	Erfoud	21.1	NAU5
NWA 2377	–	2004	–	–	327	1	L3.7	S2	W2	2–24.6	–	–	Erfoud	21.7	NAU1
NWA 2378	–	2004	–	–	3141	1	H3.5	S2	W2	4.2–22.6	–	Cr_2O_3 in ol = 0.05–0.34 wt%	Erfoud	21	NAU1
NWA 2379	–	2004	–	–	68	1	How	–	–	–	–	See separate entry	Erfoud	13.6	NAU7
NWA 2380	–	2004	–	–	4526	1	LL5	S2	W1	29.9	24.1	–	Erfoud	20.7	NAU1
NWA 2381	–	2004	–	–	132	3	LL	–	–	–	–	See separate entry	Erfoud	21	NAU7
NWA 2382	–	2004	–	–	298	1	L4	S2	W1	24.1	20.8	–	Erfoud	23	NAU1
NWA 2383	–	2004	–	–	58	1	LL5	S3	W4	28.9	24	–	Erfoud	11.7	NAU1
NWA 2384	–	2004	–	–	418	1	LL4	S3	W2	27	22.8	–	Erfoud	21.4	NAU1
NWA 2385	–	2004	–	–	410	1	L3.8	S1	W2	3.8–24.8	–	Metal-silicate symplectic	Erfoud	21	NAU1
NWA 2386	–	2004	–	–	440	1	CK4	–	–	–	–	See separate entry	Erfoud	22	NAU6
NWA 2388	–	2004	–	–	81	1	CK6	–	–	–	–	See separate entry	Erfoud	16.2	NAU6
NWA 2389	–	2003	–	–	156	1	LL5	S3–4	W2	25.6	22.8	Localized melt pockets and shock veins	Erfoud	21	NAU4
NWA 2390	–	2004	–	–	231	1	L4	S2–6	W2	15.4–18.9	11.0–15.3	Contains recrystallized shock melt	Erfoud	22.3	NAU4
NWA 2391	–	2003	–	–	178	1	L4	S3–5	W1	24.4	20.2	Shock darkened	Erfoud	21.5	NAU1
NWA 2392	–	2004	–	–	602	1	L4	S3	W1	23.4	23.4	Shock darkened	Erfoud	27.9	NAU1
NWA 2393	–	2004	–	–	828	1	L4	S4–5	W2	23.5	20.5	Shock darkened	Erfoud	26.3	NAU1
NWA 2394	–	2004	–	–	277	1	L4	S3–6	W2	24.1	21	Shock melt br	Erfoud	22.7	NAU1
NWA 2395	–	2004	–	–	423	1	LL4	S2	W2	28.2	23.6	–	Erfoud	20.1	NAU1
NWA 2396	–	2004	–	–	865	1	LL4	S2	W2	29	23.2	–	Erfoud	20.4	NAU1
NWA 2397	–	2004	–	–	323	1	L4	S3–5	W1	23.2	19.9	Shock darkened	Erfoud	23.1	NAU1
NWA 2398	–	2004	–	–	718	1	LL3.5	S1	W2	8.1–35.3	–	Cr_2O_3 in olivine avg = 0.09 wt%	Erfoud	20.1	NAU1
NWA 2399	–	2004	–	–	280	1	L4	S3–5	W2	23.9	20.6	Shock darkened	Erfoud	20.4	NAU1
NWA 2400[b]	–	2002	–	–	136	1	Achondrite	–	–	–	–	See separate entry	Erfoud	20.2	NAU1
NWA 2427	Morocco	03/15/2004	–	–	111.5	2	H3	S1	W1	20.8	–	–	Erfoud	20	Pol
NWA 2428	–	2004	–	–	1650	1	Iron, IAB subclass HL	–	–	–	–	See separate entry	Erfoud	55	La1
NWA 2429	–	2004	–	–	206	1	LL4	S2	W2	24.6	20.8	–	Erfoud	21.4	NAU1
NWA 2431	–	2004	–	–	36	1	CO3.3	S2	W2	37.2–41.4	–	Cr_2O_3 in olivine = 0.06–0.10	Erfoud	3.6	NAU1
NWA 2433	–	2004	–	–	24	1	L3.9	S2	W2	23.4–25.6	–	–	Erfoud	5.3	NAU1
NWA 2434	–	2004	–	–	441	1	Dio	–	–	–	–	See separate entry	Erfoud	27.6	NAU1
NWA 2443	–	11/2003	–	–	230	1	H3–5	S1	W1–2	17 ± 0.6	13.5 ± 4	br; minor type 3 components	Dortmund	20	Mün7
NWA 2446	–	12/2003	–	–	32	1	R3	S2	–	28 ± 17	10 ± 4.5	Peak: ~Fa_{40}; br, cv	Hamburg	6	Mün7
NWA 2447	–	12/2003	–	–	132	1	L5–6	S2	W2–3	24.5	20	br, cv, ringw.; partly S6	Hamburg	20	Mün7
NWA 2448	–	04/2004	–	–	1545	1	L6	S5	W2	27.5	22	sv	Stuttgart	20	Mün7
NWA 2449	–	04/2004	–	–	284	1	LL6	S2	W2	28.5	24	sv, br	Stuttgart	26	Mün7
NWA 2451	–	04/2004	–	–	6370	1	L6	S3	W3	25	20	sv	Stuttgart	37	Mün7
NWA 2452	–	04/2004	–	–	176	1	L6	S3	W2	23	19.5	sv, strong shock darkening	Stuttgart	20	Mün7
NWA 2453	–	04/2004	–	–	2280	24	L3-6	S3	W1–2	25.5 ± 1.7	19.5 ± 3	sv, br	Stuttgart	36	Mün7

Table 7. Meteorites from Africa (uncertain locations; numbered). *Continued.*

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NWA 2454	–	06/2004	–	–	222	1	H5/6	S3	W1	18	15.5	sv, cv	St. Marie	22	Mün7
NWA 2455	–	06/2004	–	–	38	1	LL4–5	S2	W3	27.5	23	sv, cv, br	St. Marie	8	Mün7
NWA 2456	–	06/2004	–	–	166	1	LL6	S5	W2	29	23.5	sv	St. Marie	20	Mün7
NWA 2459	–	06/2004	–	–	166	1	LL3–5	S2	W1–2	21 ± 12	8.5 ± 7.4	sv, br	St. Marie	19	Mün7
NWA 2460	–	06/2004	–	–	100	1	LL6	S3	W2–3	29.5	24	cv, sv, br	St. Marie	20	Mün7
NWA 2461	–	06/2004	–	–	108	1	LL3	S2	W1–2	26.5 ± 2.5	12.5 ± 7	–	St. Marie	20	Mün7
NWA 2462	–	06/2004	–	–	114	1	L6	S1	W2–3	24.5	20	cv	St. Marie	25	Mün7
NWA 2466	–	06/2004	–	–	446	1	H3–6	S1	W1	19 ± 4.5	13 ± 5.5	sv, br	St. Marie	38	Mün7
NWA 2467	–	06/2004	–	–	65	1	E6		W2	–	0.3	–	St. Marie	10	Mün7
NWA 2474	–	06/2004	–	–	62	1	H4	S2	W3	18	15.5	sv	St. Marie	10	Mün7
NWA 2475	–	06/2004	–	–	116	1	L5	S3	W1	24	20	sv	St. Marie	20	Mün7
NWA 2476	–	06/2004	–	–	110	1	H4/5	S4	W2	18	15.5	sv	St. Marie	20	Mün7
NWA 2477	–	06/2004	–	–	176	1	H5	S3	W3	17.5	15.5	–	St. Marie	20	Mün7
NWA 2479[b]	Morocco	2004	–	–	37.8	2	Euc	–	–	–	41.9–43.9	Pigeonite $Fs_{39.9–40.3}Wo_{5.9–7.1}$; Plag An_{97}	–	8.1	Be8
NWA 2480	Morocco	2004	–	–	4.1	1	How	–	–	–	–	See separate entry	–	1.15	Be8
NWA 2481[b]	Western Sahara	2003	–	–	5009	Several	Euc	–	–	–	–	Pigeonite $Fs_{43.1–53.3}Wo_{5.8–18.7}$; Plag $An_{87.5–92.3}$	–	20.4	Be2
NWA 2482[b]	Morocco	2004	–	–	1000	2	Euc	High	–	–	41.5–50.9	Pigeonite $Fs_{44.4–54.3}Wo_{5.4–17.5}$; Plag $An_{79.9–95.2}$	–	28.2	Be5
NWA 2483[b]	Western Sahara	2004	–	–	280.2	1	Euc	High	–	–	51–57.7	Pig:eonite $Fs_{47.9–55.3}Wo_{5.9–16.5}$; Plag $An_{78.8–88.5}$	–	20.3	Be5
NWA 2484[b]	Western Sahara	2004	–	–	11.9	1	Euc	Mod.	–	–	51.8–58.6	Pigeonite $Fs_{23.4–57.8}Wo_{5.2–17.3}$; Plag $An_{83.7–93.3}$	–	2.8	Be5
NWA 2485	Morocco	2003	–	–	61.7	1	H5	S4	W3	17.7	15.8	–	–	17.7	Be7
NWA 2486	Morocco	2003	–	–	109	1	L5	S4	W1	22.6	19	–	–	23.4	Be7
NWA 2487	Morocco	2004	–	–	127	1	H3	S2	W2	15.9 (0.5–30.2)	15.8 (1.2–34.2)	–	–	20.5	Be5
NWA 2488	Morocco	2003	–	–	18000	Several	H5	S6	W1	17.7	15.1	Partly melted rock	–	22.4	Be2
NWA 2489	Morocco	2004	–	–	14.1	2	L6	S2	W1	23.7	19.6	–	–	3.8	Be5
NWA 2490	Morocco	2004	–	–	60	1	H3	S2	W2	13 (0.5–32.2)	12.3 (1.1–23.5)	–	–	13.8	Be5
NWA 2491	Morocco	2004	–	–	651	1	H6	S2	W3	18	15.9	–	–	21.9	Be5
NWA 2492	Morocco	2004	–	–	162.3	1	LL6	S4	W1	29.7	23.8	–	–	21.9	Be5
NWA 2493	Morocco	2004	–	–	288.2	1	L6	S6	W1	23.8	20.6	Partly melted rock	–	20.1	Be5
NWA 2494	Morocco	2004	–	–	490	1	H6	S3/4	W2/3	17.3	15.4	–	–	25.5	Be5
NWA 2495	Morocco	2004	–	–	149	1	L6	S2	W3	23.9	20	–	–	21.7	Be5
NWA 2496	Morocco	2004	–	–	132	1	H3	S2	W2/3	12.2 (0.6–25.2)	11.1 (1.9–23.5)	–	–	20.1	Be5
NWA 2497	Morocco	2004	–	–	166	1	CO3	S2	W1	20.7 (0.1–43.1)	1.9 (0.8–5.2)	–	–	20.9	Be5
NWA 2498	Morocco	2004	–	–	6000	1	H6	S2	W3	18.1	16.1	–	–	20	Be5
NWA 2499	Morocco	2004	–	–	82	2	LL6	S4	W3	29.7	24.1	br, sv	–	18.8	Be5
NWA 2500	Morocco	2004	–	–	72	1	H3	S2	W3	10.3 (0.4–34.2)	11.5 (1.3–28.6)	–	–	15.3	Be5

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NWA 2501	Morocco	2004	–	–	1165	1	H3	S2	W2	17.1 (0.6–38.2)	11.7 (1.9–25.2)	–	–	33.9	Be5
NWA 2502	Morocco	2004	–	–	590	4	CV3	S2/3	W3	7.5 (0.4–48.8)	5.7 (0.8–16)	–	–	20.4	Be5
NWA 2503	Morocco	2004	–	–	400	3	R3–6	S3	W3/4	7.5–42.3	1.1–24.9	br; Augite $Fs_{7.7–19.9}Wo_{21.5–48.7}$	–	20.6	Be5
NWA 2504	Morocco	2004	–	–	382	5	H3–4	S6	W1	19.8 (1.1–23)	16.1 (1.8–25.2)	br; partly melted	–	22.3	Be5
NWA 2505	Morocco	2004	–	–	390	1	L5	S4	W2	23.3	19.7	–	–	23.6	Be5
NWA 2506	Morocco	2004	–	–	395	1	L6	S4	W2	23.6	19.8	–	–	21.6	Be5
NWA 2507	Morocco	2004	–	–	28	1	H4	S6	W0/1	17.3	15.1	Partly melted	–	6.7	Be5
NWA 2508	Morocco	2004	–	–	14.7	1	CK4/5	S2	W2	32.4	–	–	–	3	Be5
NWA 2509	Morocco	2004	–	–	4000	1	H6	S2	W0/1	17.9	15.8	–	–	22.5	Be5
NWA 2510	Morocco	2004	–	–	755	1	L3–6	S2	W3	15.6–28	6–23.7	br	–	20.7	Be5
NWA 2511	Morocco	2004	–	–	124	1	L3–6	S2/3	W3	0.6–30	1.1–24.4	–	–	20.2	Be5
NWA 2512	Morocco	2004	–	–	250	1	CO3	S2	W1	0.7–45.2	1.0–5.2	–	–	20.1	Be5
NWA 2514	–	–	–	–	6.6	1	H4	S1	W4	16.8	18.3	–	–	3	Prato3
NWA 2515[b]	–	01/09/2004	–	–	217.6 2	1	Dio	S3	W3	–	26.5	Rare plagioclase and opaques, $\chi = 3.13$	Erfoud	22.5	Pa17
NWA 2516[b]	–	01/09/2004	–	–	295.7 4	2	Euc	–	W2	–	56.4	Pigeonite $Fs_{51.6}Wo_{4.4}$; $\chi = 3.23$	Erfoud	20.9	Pa17
NWA 2517[b]	–	01/09/2004	–	–	17.6 4	1	Ure	S4	W2	22.6 ± 0.2	19.1	$\chi = 4.35$	Erfoud	3.3	Pa17
NWA 2518	–	01/09/2004	–	–	30.9 2	1	H4			19.1 ± 0.3	16.8 ± 0.15	–	Erfoud	8.3	Pa17
NWA 2519	–	01/09/2004	–	–	44.4 7	1	CK4	S3	W2	31.3 ± 0.4	27.0 ± 1.1	See separate entry	Erfoud	9.4	Pa17
NWA 2520	–	01/09/2004	–	–	75.5 3	1	LL3	S4/S5	W4	0.9–32.3 (25.8 ± 7.7)	3.5–27.7 (18.2±8.9)	See separate entry, est. subtype 3.6/3.7	Erfoud	15.8	Pa17
NWA 2521	–	01/09/2004	–	–	47.8 3	11	H/L3	S3/S4	W2	0.7–37.9 (18.2 ± 7.3)	2.4–33.2 (14.3±6.1)	Zoned ol, px; melt pockets, est. subtype 3.7	Erfoud	9.6	Pa17
NWA 2522	–	01/09/2004	–	–	135.1 2	1	LL3	S2	W3	28.1 ± 0.2	23.5±1.2	Well-sep. opaque nodules, est. subtype 3.9	Erfoud	18.5	Pa17
NWA 2526	–	06/26/2003	–	–	42.9	1	E achond	–	W2	–	0–0.5	About 10% metal	St. Marie	6	Mün7
NWA 2527	–	2003	–	–	600	1	Mes	S1	W1	23.5 ± 0.5	23 ± 1.5	1	Morocco	20	Mün7
NWA 2528	–	2001	–	–	5273	1	LL(L)3	–	–	18.5 ± 8	15.5 ± 1	–	St. Marie	62	Mün7
NWA 2529	–	P 01/2003	–	–	52.7	1	H5	S3	W2	19	17	cv	Erfoud	10.7	Mün8
NWA 2530	–	P 01/2003	–	–	57.1	1	L6	S4	W2	25.5	21	sv	Erfoud	12.7	Mün8
NWA 2531	–	P 12/2003	–	–	210	2	LL6	S4	W3	30.5	25	2	Hamburg	22	Mün8
NWA 2532	–	P 12/2003	–	–	33.3	1	Dio	S2	W0/1	–	32 ± 2	br; $An_{90 ± 2}$	Hamburg	7	Mün8
NWA 2533	–	P 05/2002	–	–	190	1	H	–	W3	20	17.5	Impact melt br; contains type 6 fragments	Rissani	25.7	Mün9
NWA 2534	–	P 12/2002	–	–	593	1	LL5–6	S3	W1	29.5	24	sv, br	Erfoud	22.2	Mün10
NWA 2535	–	P 06/2002	–	–	187	1	L5	S4	W2	24	19	sv	Erfoud	22.1	Mün10
NWA 2536	–	P 01/2003	–	–	51.2	1	LL4–6	S3	W2–3	30.5	25.5	sv, br; small vars in ol, px between clasts	Erfoud	11	Mün10

Table 7. Meteorites from Africa (uncertain locations; numbered). *Continued.*

Name	Possible origin or pseudonym	Date found (mm/dd/yyyy)	Latitude (N)	Longitude (W)	Weight (g)	Pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Comment[a]	Place purchased	Type (g)	Info
NWA 2537	–	P 04/2003	–	–	65.4	1	L6	S4	W3	24.5	20.5	sv, cv, partly S5	Stuttgart	14.7	Mün10
NWA 2538	–	P 06/2003	–	–	215	1	Mes	S2	W0/1	–	26.5 ± 2 (21–30)	$An_{91.5 \pm 2}$; sv, br	St. Marie	21	Mün10
NWA 2539	–	P 06/2003	–	–	34	1	LL6	S3	W3	30.5	24.5	sv	St. Marie	6.9	Mün10
NWA 2540	–	P 06/2003	–	–	25.1	1	LL6	S3	W1	28.5	23.5	sv, br	St. Marie	5.4	Mün10
NWA 2541	–	P 06/2002	–	–	42.6	1	L5/6	S3	W1	24	20	–	Erfoud	9.3	Mün10
NWA 2542	–	P 06/2003	–	–	20	1	L3–6	S2	W1	25	21	sv, br, fragments of imb	Erfoud	4.2	Mün10
NWA 2543	–	P 11/2003	–	–	33.9	4	Euc	S2	W2	–	–	Opx: $Fs_{48–57}$; Plag: $An_{91 \pm 1.5}$; br	Munich	7	Mün10
NWA 2544	–	P 11/2003	–	–	15	1	L(LL)3	S2	W2	26 ± 10	17.5 ± 8.5	sv	Munich	3.1	Mün10
NWA 2545	–	P 11/2003	–	–	19.7	1	L3–6	S2	W0/1	25.5 (eq. lith)	21.5 (eq. lith)	3	Munich	4.3	Mün10
NWA 2546	–	P 11/2003	–	–	185	1	H5	S4	W1	20.5	18	sv, silicate darkening	Munich	21.1	Mün10
NWA 2547	–	P 11/2003	–	–	287	1	L3–5	S2	W3	23.5 ± 10.5	18.5 ± 9.5	sv, br	Munich	23.1	Mün10
NWA 2548	–	P 11/2003	–	–	28.8	1	H4	S1	W1	18.5	16.5 ± 1.5	Porous	Munich	6.8	Mün10
NWA 2549	–	P 11/2003	–	–	17	1	CV3 ox	S1	W4	28 ± 16 (0–41)	0–11	–	Munich	4	Mün10
NWA 2550	–	P 11/2003	–	–	14	1	Euc	S3	W2		62 ± 3	Plag: $An_{84 \pm 4}$; sv	Munich	3	Mün10
NWA 2618	–	2004	–	–	152	1	L6	S2	W3	24.2	20.6	–	Erfoud	21.4	NAU1
NWA 2619	–	2004	–	–	220	1	H4	S2	W3	18.2	16.4	–	Erfoud	20	NAU1
NWA 2620	–	2004	–	–	1304	1	H4	S2	W2	18.5	16.9	–	Erfoud	21.1	NAU1
NWA 2621	–	2004	–	–	4639	1	L4	S2	W2	24.9	20.9	–	Erfoud	17	NAU1
NWA 2622	–	2004	–	–	827	1	LL4	S3–5	W2	28.2	23.5	–	Erfoud	20.8	NAU1
NWA 2623	–	2003	–	–	153	1	L4	S3–6	W2	25.3	22	Recrystallized melt rock	Erfoud	21.3	NAU1
NWA 2624[b]	–	2004	–	–	241	1	Ure	–	–	9.8–19.6	16.8	–	Erfoud	21.6	NAU1
NWA 2625	–	2004	–	–	305	1	Ure	–	–	–	–	See separate entry	Erfoud	22.2	NAU1
NWA 2626	Algeria	2004	–	–	31.0 7	1	Martian	–	–	–	–	See separate entry	–	–	–
NWA 2627	–	2004	–	–	68	1	Acapulcoite	–	–	–	–	See separate entry	Erfoud	13.7	NAU1
NWA 2629[b]	–	2004	–	–	244	1	Dio	–	–	28	23.4	–	Erfoud	22	NAU1
NWA 2634[b]	–	2004	–	–	600.2	1	Ure	High	–	3.8–21.4	–	Pig: $Fs_{18.8}Wo_{9.9}$	Erfoud	46	NAU1
NWA 2635	–	2004	–	–	4200	1	Achond ung	–	–	–	–	See separate entry	Erfoud	23.2	NAU1
NWA 2639	–	2004	–	–	539	3	Mes	–	–	–	–	See separate entry	Erfoud	21.1	NAU1
NWA 2641	–	2004	–	–	97	1	How	–	–	–	–	See separate entry	Erfoud	18.8	NAU1
NWA 2644	–	2004	–	–	216	1	How	–	–	–	–	See separate entry	Erfoud	22	NAU1
NWA 2645	–	2004	–	–	166	1	EL6	–	–	–	–	See separate entry	Erfoud	21.3	NAU1
NWA 2668	Morocco	2003	–	–	165	1	H6	S2	W3	18.6	16.2	–	–	21	Be5
NWA 2669	Morocco	2003	–	–	336	1	H4	S3	W2	15.6–16.8	13.9–15.1	–	–	23.6	Be5
NWA 2670	Morocco	2003	–	–	66.8	1	L4	S4	W2/3	21.1–25.2	9.1–17.2	–	–	15.3	Be5
NWA 2671	Morocco	2003	–	–	117	1	H4	S2	W3	17–18.3	5.4–19.2	–	–	21.5	Be5
NWA 2672	Morocco	2003	–	–	425	1	H6	S2	W2/3	17	15	–	–	20.3	Be5
NWA 2673	Morocco	2003	–	–	45	1	H5	S2	W1	17.4	15.5	–	–	9.2	Be5
NWA 2674	Morocco	2003	–	–	92	1	H6	S4	W3	17.6	15.6	–	–	18.4	Be5
NWA 2675	Morocco	2004	–	–	3354	1	L6	S4	W1	24.8	21.5	–	–	26.6	Be8
NWA 2677	Northwest Africa	2004	–	–	100	1	Iron, IIICD	–	–	–	–	See separate entry	Erfoud	17	La1
NWA 2738	–	2004	–	–	370	1	How	–	–	–	–	See separate entry	Erfoud	30	NAU1

Table 7. Meteorites from Africa (uncertain locations; numbered). *Continued.*

Name	Possible origin or pseudonym	Date found (mm/dd/yyyy)	Latitude (N)	Longitude (W)	Weight (g)	Pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Comment[a]	Place purchased	Type (g)	Info
NWA 2739	Algeria	2002/2003	–	–	824	4	How	–	–	–	–	See separate entry	–	35	NAU1
NWA 2740	–	–	–	–	53822	3	L5	S1	W0	20.9	24.5	–	–	30	Prato3
NWA 2741	–	–	–	–	1350	1	LL5	S1	W0	29	23.6	–	–	20.8	Prato3
NWA 2807	Northwest Africa	2004	–	–	950	1	L3	S3	W3	0.6–36.3 (48%)	0.9–29.8	Co in kamacite = 0.9 wt%	–	26.6	Vr3
NWA 2808	Morocco	2003	–	–	2875	1	H6	S3–4	W0–1	19.0 ± 0.3	16.7 ± 1.1	4	Tisgui-Remz	>20	Ham1
NWA 2809	Morocco	2003	–	–	4850	1	LL6	S3	W2	32.3 ± 1.3	24.1 ± 1.9	br	TarfenNouss	>20	Ham1
NWA 2810	Morocco	2003	–	–	2073	1	H5	S3	W1–2	19.1 ± 0.6	16.9 ± 0.8	br	El Mahabas	>20	Ham1
NWA 2811	Morocco	2003	–	–	950	1	L4–5	S3/4	W1–2	26.8 ± 0.3	22.5 ± 0.1	br; cv	El Mahabas	>20	Ham1
NWA 2813	Morocco	2003	–	–	194	1	L6	S3	W2	24.6 ± 0.3	–	br, sv	Kem Kem	>20	Ham1
NWA 2814	Morocco	2003	–	–	76	1	LL6	S3	W0	31.1 ± 0.5	26.5 ± 0.7	br	Kem Kem	15	Ham1
NWA 2816	Morocco?	2003	–	–	114	1	H4/5	S2	W3	18.8 ± 0.2	16.8 ± 0.1	–	–	>20	Ham1
NWA 2817	Morocco?	2003	–	–	337	1	Ure	–	–	22.2 ± 0.3	–	5	–	>20	Ham1
NWA 2818	Morocco?	2003	–	–	156	1	H5	S2	W4	19.8 ± 0.4	17.5 ± 0.3	br	–	>20	Ham1
NWA 2819	Morocco	2003	–	–	80	1	How	S3	W0	–	–	–	Zagora	16.2	Ham1
NWA 2820	Morocco	2003	–	–	200	1	LL <3.5	S2	W2	22.81 ± 14.2 (62.4)	20.4 ± 9.8 (48.1)	–	Zagora	19.8	Ham1
NWA 2872	Morocco	2000	–	–	859	1	Ure	S3	W2	23.7 ± 0.2	19.7	–	–	859	Pa4
NWA 2873	–	2002	–	–	36	1	How		W1		22.3	See separate entry	–	7.4	Pa2
NWA 2874	Morocco	12/2004	–	–	1800	6	LL6–3	S4	W1/2	27.0 ± 0.3	7.3–22.8	6	Er-Rachida	20.37	Pa1
NWA 2875	Morocco	12/2004	–	–	32	1	L6	S2	W1	25.6 ± 0.4	21.8 ± 0.3	Entirely crusted stone	Er-Rachida	7	Pa1
NWA 2876	Morocco	12/2004	–	–	51.7	1	H5	S3	W2	18.9 ± 0.2	16.9 ± 0.16	–	Er-Rachida	11.9	Pa1
NWA 2877	–	12/2003	–	–	19200	1	L/LL6	S3	W2	25.4 ± 0.2	21.6 ± 0.5	Entirely crusted stone	–	20.5	Pa20
NWA 2878	–	2002	–	–	120	1	L4	S4	W3	23.8 ± 2.1	21.3 ± 0.4	7	–	21.5	Pa2
NWA 2879	–	2004	–	–	2380	1	L4/5	S3	W2	24.5 ± 0.4	20.6 ± 0.3	8	Munich	20.3	Pa3
NWA 2880	–	2004	–	–	63	1	H6	S3	W4	19.7 ± 0.2	17.4 ± 0.4	–	Munich	14	Pa3
NWA 2881	–	2004	–	–	96	1	LL5	S4	W3	25.8 ± 0.9	22.3 ± 0.9	Many small melted pockets	Tokyo	20.5	Pa3
NWA 2882	–	2004	–	–	47	1	H6	S2	W4	19.8 ± 0.3	17.4 ± 0.3	–	Munich	10	Pa3
NWA 2883	Morocco	12/2004	–	–	145	1	L5	S2	W3	25.3 ± 0.2	22.4 ± 1.5	–	Er-Rachida	20.1	Pa1
NWA 2884	–	2001, 2002, 2003	–	–	15441	10	L4	S4	W2	21.8 ± 0.6	18.8 ± 0.5	Clear chondritic texture	–	31.77	Pa20
NWA 2885	–	01/02/2003	–	–	11480	Several	H6	S2	W2/3	18.0 ± 0.7	15.9 ± 0.4	–	–	35.2	Pa20
NWA 2886	–	02/2003	–	–	754	1	LL6	S2	W1	31.6	26.1	–	–	27.5	Pa20
NWA 3043	Morocco	2003	–	–	1440	1	L6	S4	W1	24.1	20.4	–	–	25.2	Be5
NWA 3044	Morocco	2003	–	–	58	1	H4	S2	W2	18.2	16.4	–	–	13	Be5
NWA 3045	Morocco	2003	–	–	2400	Many	H6	S4	W0	17.9	16.4	–	–	20.1	Be5
NWA 3046	Morocco	2003	–	–	80	1	L3	S3	W1	22.8 (17.3–24.7)	14.5 (2.5–21.3)	–	–	21.3	Be5
NWA 3047	Morocco	2003	–	–	77.6	1	H6	S4	W2	18.8	16.6	–	–	20	Be5
NWA 3048	Morocco	2003	–	–	63	1	H6	S2	W2	19.3	17.2	–	–	12.8	Be5
NWA 3049	Morocco	2003	–	–	21	1	L6	S6	W2	25.6	21.8	sv, rw	–	5.4	Be5
NWA 3050	Morocco	2003	–	–	315	1	L6	S6	W1	25.4	22.6	Partly melted rock	–	21.3	Be5
NWA 3051	Morocco	2003	–	–	1788	1	L5/6	S4	W3	25.7	21.7	–	–	33	Be5
NWA 3052	Erfoud	2002	–	–	27	1	L6	S3	W3	25.7	21.9	–	–	5.8	Be2
NWA 3053	Erfoud	2002	–	–	70	1	H4–6	S2	W1	19.4	17.4	br	–	14.6	Be2
NWA 3054	Zagorra	2003	–	–	2613	1	H4/5	S3	W0	17.6	15.6	–	–	21.8	Be2

Table 7. Meteorites from Africa (uncertain locations; numbered). *Continued.*

Name	Possible origin or pseudonym	Date found (mm/dd/yyyy)	Latitude (N)	Longitude (W)	Weight (g)	Pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Comment[a]	Place purchased	Type (g)	Info
NWA 3057	Erfoud	2003	–	–	138	1	L6	S6	W0	21.8	18.8	Partly melted rock	–	26.8	Be2
NWA 3058	Tagounite	2002	–	–	750	1	L6	S4	W1	24.9	21.3	–	–	25.6	Be7
NWA 3059	Tagounite	2002	–	–	203.2	1	H4	S2	W3	18.2	16.2	–	–	24.1	Be7
NWA 3060	Tagounite	2002	–	–	147.2	1	L6	S3	W2	25.4	21.8	–	–	23.2	Be7
NWA 3061	Tagounite	2002	–	–	489.8	2	H6	S4	W0	19.5	17.2	–	–	27.8	Be7
NWA 3062	Tagounite	2002	–	–	88.9	1	L6	S3	W1	24.8	21.1	–	–	20.8	Be7
NWA 3063	Tagounite	2002	–	–	813	1	LL6	S4	W2	31.2	25.9	–	–	25	Be7
NWA 3064	Tagounite	2002	–	–	1074	2	LL6	S4	W1/2	29.6	25.1	br	–	22.5	Be7
NWA 3065	Tagounite	2002	–	–	114.3	1	L6	S6	W3	25.3	21.5	sv, rw	–	23.2	Be7
NWA 3067	Tagounite	2002	–	–	140	5	H4	S2	W1	17.7	14.4 (8.6–17.1)	–	–	22.1	Be7
NWA 3068	Tagounite	2002	–	–	147.8	1	L3	S3	W1/2	11.8 (0.8–27.8)	9.8 (3.3–17.3)	–	–	20	Be7
NWA 3069	Erfoud	2002	–	–	1200	1	L5/6	S2	W2	25.2	21.6	–	–	25	Be2
NWA 3070	Erfoud	2002	–	–	27	1	LL5	S2	W2	28.6	24.3	–	–	5.6	Be2
NWA 3071	Erfoud	2002	–	–	30	1	H3	S2	W1	16.8 (3.4–21.9)	16 (9.7–18.2)	–	–	6.4	Be2
NWA 3072	Erfoud	2002	–	–	150	4	H4	S2	W1	18.4	13.1 (4.9–21.9)	–	–	20	Be2
NWA 3073	Erfoud	2002	–	–	15	1	H4	S2	W3	19.3	14.4 (9.8–17.1)	–	–	3.5	Be2
NWA 3076	Erfoud	2002	–	–	80	1	H6/7	S2	W0	18.3	16.1	$Wo_{1.4}$	–	21	Be2
NWA 3077	Morocco	2003	–	–	11.2	1	Ure	–	W1	18.3 (6.2–23)	12 (0.8–19.5)	–	–	2.3	Be2
NWA 3079	Morocco	2003	–	–	314	1	H4	S2	W3	17.5	15.5	–	–	40	Be6
NWA 3080	Morocco	2003	–	–	139.3	1	L6	S6	W0	21.9	19.1	Partly melted rock	–	20	Be6
NWA 3084	Morocco	2002/2003	–	–	434	1	H5	S4	W2	18.9	16.1	–	–	28.1	Be6
NWA 3085	Morocco	2002/2003	–	–	300	1	H5	S2	W4	18.2	15.9	–	–	38.9	Be6
NWA 3086	Morocco	2002/2003	–	–	354	1	L6	S5	W2	23.9	20.3	–	–	32.4	Be6
NWA 3087	Morocco	2002/2003	–	–	518	1	L3/4	S4	W2	22.3 (10.6–32.4)	19.3 (13.5–23)	sv	–	51.5	Be6
NWA 3088	Morocco	2002/2003	–	–	171	1	L6	S4	W3	24	20.4	–	–	30	Be6
NWA 3089	Morocco	2002/2003	–	–	227	1	L5	S4	W2	23.9	20.3	sv	–	36.8	Be6
NWA 3090	Morocco	2002/2003	–	–	221	1	H4	S3	W3	17.1	15.6	–	–	28.6	Be6
NWA 3091	Morocco	2002/2003	–	–	338	1	L5	S4	W2	25.2	22.3	–	–	26.3	Be6
NWA 3092	Morocco	2002/2003	–	–	276	1	L6	S4	W2	22.4	19.4	–	–	21.7	Be6
NWA 3093	Morocco	2003	–	–	94	1	CO3	S2	W1	0.7–52.6	1.1–47.3	–	–	22	Be5
NWA 3094	Morocco	2003	–	–	20000	Many	L6	S6	W1	23.2	19.6	Partly melted rock	–	31.7	Be5
NWA 3095	Morocco	2003	–	–	470	1	CV3	S1	W2	0.2–43	1–1.5	–	–	22.8	Be5
NWA 3096	Morocco	2003	–	–	232	1	L6	S6	W1	21.3	18.3	Partly melted rock	–	20	Be5
NWA 3097	Morocco	2003	–	–	256	1	H6	S2	W3	17.9	16.1	–	–	23	Be5
NWA 3098	Morocco	2003	–	–	78.7	1	R5	S3/4	W3	38.6	–	–	–	16	Be5
NWA 3099	Morocco	2003	–	–	179	1	L/LL3	S4	W1	20.5 (0.8–26.8)	16.2 (2–26)	sv	–	20	Be5
NWA 3100	Morocco	2003	–	–	136	1	Primitive achondrite	–	–	–	–	See separate entry	Rissani	20.2	NAU
NWA 3101	–	2003	–	–	151.7	1	H6	S2	W1	18.8	16.7	–	Rissani	20.2	NAU
NWA 3102	–	2003	–	–	68.1	1	EL6	–	–	–	–	See separate entry	Rissani	13.8	NAU
					5										
NWA 3103	–	2003	–	–	74	1	LL3	S2	W3	7.5–42.4	–	–	Rissani	22.1	NAU

Table 7. Meteorites from Africa (uncertain locations; numbered). *Continued.*

Name	Possible origin or pseudonym	Date found (mm/dd/yyyy)	Latitude (N)	Longitude (W)	Weight (g)	Pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Comment[a]	Place purchased	Type (g)	Info
NWA 3104	–	2003	–	–	~10000	Many	CV3	S2	W2	1.3–38.7	–	–	Rissani	21	NAU
NWA 3105	Morocco	2001	–	–	89.2	1	CR2	–	–	–	–	See separate entry	Rissani	12.35	NAU
NWA 3106	–	2003	–	–	130	1	Diog	–	–	–	–	See separate entry	Rissani	20.4	NAU
NWA 3107	–	2003	–	–	66.85	1	H6	S2	W2	18.9	17	–	Rissani	13.4	NAU
NWA 3108[b]	Morocco	2003	–	–	51	1	Ure	–	–	21.1–2.3	16.9	Contains metal (9.9% Ni) and troilite	Erfoud	8.6	NAU
NWA 3109[b]	Morocco	2003	–	–	32	1	Ure	S2	–	23.3–7.6	–	Pig: $Fs_{17.8}Wo_{3.3}$	Erfoud	6.5	NAU
NWA 3110	Morocco	2003	–	–	173	1	LL3.9	S2	W1	27.1–30.3	21.4–24.7	–	Zagora	20.6	NAU
NWA 3111	Morocco	2003	–	–	356	1	LL3.9	S1	W1	26.0–30.6	21.2–23.6	–	Erfoud	20.1	NAU
NWA 3112	Morocco	2003	–	–	143	1	LL3	S2	W2	27.4	24	–	Zagora	20.5	NAU
NWA 3113	Morocco	2003	–	–	236	1	H3	S2	W2	16.2–18.8	14.8–15.4	–	Erfoud	20.1	NAU
NWA 3114	Morocco	2003	–	–	70	1	L3.8	S2	W1	19.2–25.6	17.3–22.1	–	Erfoud	14	NAU
NWA 3115	Morocco	2003	–	–	34.7	1	H4	S2	W2	18.2	16.3	–	Zagora	6.94	NAU
NWA 3116	Morocco	2003	–	–	27	1	CK5	S3	–	–	–	See separate entry	Erfoud	5.4	NAU
NWA 3117	Morocco	2003	–	–	234	3	How	–	–	–	–	See separate entry Plus 21.4 g at UCLA	Erfoud	3.8	NAU
NWA 3118	Morocco	2003	–	–	5895	Many	CV3	–	–	–	–	See separate entry	Erfoud	20.3	NAU
NWA 3119	Morocco	2003	–	–	1073	1	LL4	S2	W1	28.4	23.6	–	Erfoud	20.8	NAU
NWA 3120	Morocco	2003	–	–	68	1	L3	S2	W1	22.5	19.1	–	Erfoud	14.2	NAU
NWA 3121	Morocco	2003	–	–	164	1	LL6	S3	W1	28	23.3	–	Erfoud	20.1	NAU
NWA 3122[b]	Morocco	2003	–	–	131	1	Euc	–	–	–	56.4–59.3	Plag $An_{86–70}Or_{8.2–2.0}$	Erfoud	21.1	NAU
NWA 3123	Morocco	2003	–	–	48.1	1	H6	S2	W1	25.1	21.3	–	Erfoud	21.5	NAU
NWA 3124	Morocco	2003	–	–	566	1	L5	S1	W2	24.4	20.3	–	Erfoud	25.1	NAU
NWA 3125	Morocco	2003	–	–	577	1	LL5	S2	W2	30.5	25.6	–	Zagora	20.8	NAU
NWA 3126	Morocco	2001	–	–	173	1	LL3.7	S4	W4	24.6–34.5	–	–	Erfoud	20.3	NAU
NWA 3127	Morocco	2001	–	–	487	1	LL3.1	S2	W3	–	–	See separate entry	–	21	NAU
NWA 3128	Morocco	2001	–	–	532	1	LL3.8	S2	W1	23.4–33	18.5–24	–	Erfoud	22.1	NAU
NWA 3129[b]	Morocco	2002	–	–	132.1	1	Euc	–	–	–	–	Pigeonite $Fs_{56.3–63.5}Wo_{16.1–6.5}$; $An_{90.8}$	Erfoud	20.1	NAU
NWA 3133	Morocco	2004	–	–	4193	Several	Primitive achondrite	–	–	–	–	See separate entry; pts at UWS	–	20.1	NAU
NWA 3134	Morocco	2004	–	–	970	1	EL6	–	W0	–	–	Possibly paired with NWA 310; plus 3.7 g at NAU	–	21.7	UWS
NWA 3135[b]	Morocco	2003	–	–	45.8	1	Ure	–	–	23.2–8.1	18.7	Pts at UWS	–	20.1	NAU
NWA 3136	Northwest Africa	2004	–	–	95	1	Lunar	–	–	–	–	See separate entry	–	–	–
NWA 3137[b]	Morocco	2004	–	–	931	1	Euc	–	–	–	61.6–2.0	$An_{89.1–90.7}Or_{0.1–0.2}$; Augite $Fs_{26.4–28.7}Wo_{43.5–44.4}$	–	20.6	UWS
NWA 3138[b]	Morocco	2004	–	–	132	1	Euc	–	–	–	62.7	$An_{88.7–89.6}Or_{0.3–0.4}$; Augite $Fs_{62.7}Wo_{1.3}$	–	20.7	UWS
NWA 3140[b]	Morocco	2004	–	–	750	1	Ure	–	–	22.2–13.8	–	Pig: $Fs_{17.9}Wo_{9.1}$	–	20	UWS
NWA 3141[b]	Morocco	08/2004	–	–	249	1	Euc	–	–	–	63.1–64.7	Cpx: $Fs_{25.1–27.1}Wo_{44.9–44.3}$	–	20	UWS1
NWA 3142[b]	Morocco	08/2004	–	–	44	1	Euc	–	–	–	60–62.2	Cpx: $Fs_{25.9–26.2}Wo_{44.1–43.8}$	–	11.1	UWS1

Table 7. Meteorites from Africa (uncertain locations; numbered). *Continued.*

Name	Possible origin or pseudonym	Date found (mm/dd/yyyy)	Latitude (N)	Longitude (W)	Weight (g)	Pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Comment[a]	Place purchased	Type (g)	Info
NWA 3143	Morocco	08/2004	–	–	2335	1	Dio	–	–	–	–	br; see separate entry	–	22.7	UWS1
NWA 3145	Morocco	2004	–	–	678	1	Primitive achondrite	–	–	–	–	See separate entry	Erfoud	28.6	UWS
NWA 3146	Morocco	2004	–	–	304	Several	R4	–	–	–	–	See separate entry	Erfoud	20	UWS
NWA 3147[b]	Morocco	2005	–	–	290	1	Euc	–	–	–	60.5–61	9	Tagounite	20.3	UWS
NWA 3148[b]	Northwest Africa	2004	–	–	138	1	Euc	–	–	–	62.4–63.1	Plag $An_{89.2–90}Or_{0.4}$, cpx: $Fs_{30}Wo_{42}$	Rissani	20.5	UWS
NWA 3149	Morocco	08/2004	–	–	2594	1	How	–	–	–	–	See separate entry	–	20	UWS1
NWA 3171	Algeria	2004	–	–	506	1	Martian	–	–	–	–	See separate entry	–	22	UWS1
NWA 3172	–	–	–	–	21029	1	L	S6	W0	24.1 ± 0.5	–	Impact br	–	100	UCLA
NWA 3175[b]	Morocco	2002	–	–	48.6	1	Euc	–	–	–	–	Plag $An_{89.9}$; Aug $Fs_{22–48}Wo_{21–29}$; Pig $Fs_{43–59}Wo_{7–12}$	–	11.3	Be2

[a]Abbreviations: br – breccia, cv – calcite veins, imbr – impact melt breccia, mbr – monomict breccia, pbr – polymict breccia, ringw – ringwoodite, sv – shock veins; Notes: (1) $An_{94.5 \pm 3}$, only few olivines, br; or anom. achondrite (rel. low metal abundance in studied thin section); (2) sv, ringw; partly S6. This may be the second LL chondrite having ringwoodite. The first one was NWA 757 (Bischoff A. 2002, 31st Lunar and Planetary Science Conference, abstract #1264). These two samples may be paired; (3) sv, br, fragments of imb; only few unequilibrated components; (4) impact melt br with H clasts; Ol in melt: 18.64 (2.01%), opx in melt: 17.33 (5.17%); shock blackening; sulfide blebs in metal droplets in melt; macroscopical appearance as NWA 722 (L clasts); (5) olivine core: $Fa_{22.19 \pm 0.33}$, olivin rim: 19.10 ± 2,45; pyroxene: $Fs_{18.72}En_{75.12}Wo_{6.17}$; (6) br, small angular clasts separated by melted veins; in type 3 part, opx is zoned; estimated subtype 3.8; (7) melted pocket, 1.2 cm in size; native copper areas; (8) melted pocket made up of zoned olivines, $Fa_{15–20}$, 0.3 wt% Cr_2O_3 at the edge; (9) Aug $Fs_{25–27}Wo_{42–44}$; May be paired with NWA 3137.

[b]A separate entry providing a fuller descrption of these meteorites is available on the Meteoritical Bulletin Web site (http://www.meteoriticalsociety.org).

Table 8. Eurasian ordinary chondrite finds.

Name	District	State	Country	Date found (mm/dd/yyyy)	Latitude (N)	Longitude (E)	Mass (g)	Pieces	Class	Shock	WG	Fa (mol%)	Fs (mol%)	Wo (mol%)	Type	Info
Beyneu	Beyneuskiy	Mangistauskiy	Kazakhstan	10/19/2001	45°27.798′	55°14.098′	45	1	H6	S4	W3	19.1	17.9	1.3	10.75	Vr7
Castenaso	–	Emilian-Romagna	Italy	07/152003	44°29′42″	11°21′20″	120	1	L5	S3	W1	23	20	–	80.8	Sn5
Issa	Penza District	–	Russia	2002	53°52.05′	44°51.57′	14.3	1	H5	S1	W3	19	16.5	1.3	22	Vr8
Koltsovo	Kaluga District	–	Russia	07/2004	54°45.03′	36°58.68′	20.02 kg	1	H4	S1	W1	20	5–24	0.2–7.2	2034	Vr9
Lago Valscura	Argentera Mts	Cuneo	Italy	08/1995	44°11′30″	7°12′01″	200	1	H5	S4	W2	18.95	16.43	1.43	22.1	Prato5
Markovka (b)	Klyuchevskoy Dist	Altai Region	Russia	09/21/2003	52°25.443′	79°40.877′	207	1	L5	S3	W1	25.4	22.2	1.5	24.1	Vr10
Podgrodzie	Świętokrzyskie Prov.	Tarnobrzeg	Poland	03/2000	50°54.20′	21°32.99′	8.9	1	H4/5	S1	W2	18.7 ± 0.2	16.4 ± 0.2	1.3 ± 0.3	1.76	Bart1
Zerkaly	–	Altai Region	Russia	1956	52°08′	81°58′	16 kg	1	H5	–	W1	18.7	18	3.4	59.4	Vr11
Zubkovsky	–	Rostov Region	Russia	08/2003	49°47.350′	41°30.276′	2167	1	L6	S3	W2	24.3	20.8	–	165	Vr12

Appendix 1. Recently described meteorites from the U.S. ANSMET expeditions.[a] .

Name[b]	Class	Mass	Weathering	%Fa	%Fs	Pair	Ice[c]
DOM 03182	CM2	19.79	B	0–30	1–2	–	drm
DOM 03183	CM2	124.52	B	0–38	–	–	drm
DOM 03184	LL5	1.85	A/B	–	–	–	mwit
DOM 03260	LL5	308.5	C	–	–	–	–
DOM 03261	LL5	215.4	B	–	–	–	–
DOM 03262	LL5	273.5	A/B	–	–	–	mwit
DOM 03270	LL5	30.78	A/B	–	–	–	mwit
DOM 03271	LL5	36.59	C	–	–	–	mwit
DOM 03272	LL5	81.14	A	–	–	–	mwit
DOM 03273	LL5	39.53	A	–	–	–	mwit
DOM 03274	LL5	34.53	A	–	–	–	mwit
DOM 03275	LL5	24.36	B	–	–	–	mwit
DOM 03276	LL5	25.53	B	–	–	–	mwit
DOM 03277	LL5	16.07	C	–	–	–	mwit
DOM 03278	LL5	48.81	B	–	–	–	mwit
DOM 03279	LL5	41.08	B/C	–	–	–	mwit
DOM 03280	LL6	57.74	A/B	–	–	–	–
DOM 03281	LL6	11.34	B	–	–	–	mwit
DOM 03282	LL5	24.29	B	–	–	–	mwit
DOM 03283	L6	14.89	B/C	–	–	–	mwit
DOM 03284	L5	6.82	C	–	–	–	mwit
DOM 03285	L6	25.46	C	–	–	–	mwit
DOM 03286	H5	25.15	C	–	–	–	mwit
DOM 03287	L3	20.24	B	15–29	6–24	–	mwit
DOM 03288	L6	36.01	B	–	–	–	mwit
DOM 03289	H5	85.79	C	–	–	–	–
DOM 03310	LL5	13.75	B/C	–	–	–	mwit
DOM 03311	LL5	27.09	B/C	–	–	–	mwit
DOM 03312	H5	16.52	C	20	17	–	mwit
DOM 03313	H5	8.21	C	–	–	–	mwit
DOM 03314	L5	7.97	C	–	–	–	mwit
DOM 03315	LL5	12.6	B/C	–	–	–	mwit
DOM 03317	L5	11.39	B/C	–	–	–	mwit
LAP 02200	LL5	4013.1	A/B	–	–	–	–
LAP 02201	LL5	4820.9	A/B	–	–	–	–
LAP 02202	LL5	7277.3	A/B	–	–	–	–
LAP 02203	LL5	958.1	A/B	–	–	–	–
LAP 02208	LL5	1474.7	A/B	–	–	–	–
LAP 02209	LL5	1563.1	A/B	–	–	–	–
LAP 02210	LL5	2237.6	A	–	–	–	–
LAP 02211	LL5	1651.9	A/B	–	–	–	–
LAP 02213	LL5	592.6	A/B	–	–	–	–
LAP 02214	LL5	745.1	A/B	–	–	–	–
LAP 02218	L4	473.7	A/B	–	–	–	–
LAP 02230	LL6	218.7	A/B	–	–	–	–
LAP 02232	LL6	230.9	A/B	–	–	–	–

Appendix 1. Recently described meteorites from the U.S. ANSMET expeditions.[a] *Continued*..

Name[b]	Class	Mass	Weathering	%Fa	%Fs	Pair	Ice[c]
LAP 02234	LL6	24.18	A/B	–	–	–	–
LAP 02235	L5	31.11	B/C	23	20	–	–
LAP 02236	LL5	40.04	A/B	–	–	–	–
LAP 02240	H-imp	28.16	C	18	16	–	–
LAP 02241	LL5	106	A/BE	–	–	–	–
LAP 02242	H5	6.86	B	–	–	–	–
LAP 02243	H5	11.67	B/C	–	–	–	–
LAP 02244	LL5	106.46	A/B	–	–	–	–
LAP 02245	LL5	108.35	A/B	–	–	–	–
LAP 02246	LL5	127.4	A/B	–	–	–	–
LAP 02247	H5	25.33	B/C	–	–	–	–
LAP 02248	LL5	68.02	A/B	–	–	–	–
LAP 02249	LL4	20.74	A/B	–	–	–	–
LAP 02250	LL5	94.3	A/B	–	–	–	–
LAP 02251	L4	119.03	C	23	19	–	–
LAP 02252	H6	20.76	C	–	–	–	–
LAP 02253	LL5	78.66	A/B	–	–	–	–
LAP 02254	H5	114.6	A/B	19	16	–	–
LAP 02255	LL5	94.8	A/B	–	–	–	–
LAP 02256	L5	162.77	A	–	–	–	–
LAP 02257	LL5	132.33	A/B	–	–	–	–
LAP 02258	LL5	32.88	A/B	–	–	–	–
LAP 02259	LL5	54.55	A	–	–	–	–
LAP 02260	LL5	144.88	A/B	–	–	–	–
LAP 02261	LL5	118.3	B	–	–	–	–
LAP 02262	LL5	45.35	A/B	–	–	–	–
LAP 02263	LL5	92.22	A/B	–	–	–	–
LAP 02264	L5	60.33	B/C	–	–	–	–
LAP 02265	LL5	52.13	B	–	–	–	–
LAP 02266	LL4	141.88	A	–	–	–	–
LAP 02267	H6	39.85	C	–	–	–	–
LAP 02268	L5	17.81	B/C	–	–	–	–
LAP 02269	CM2	24.24	B	0–27	–	2269	–
LAP 02270	LL6	14.75	A/B	–	–	–	–
LAP 02271	LL5	9.17	A	–	–	–	–
LAP 02272	LL6	39.59	B/C	30	25	–	–
LAP 02273	LL5	25.25	A	–	–	–	–
LAP 02274	H6	26.16	C	–	–	–	–
LAP 02275	LL5	38.18	B	–	–	–	–
LAP 02276	LL5	44.16	B	–	–	–	–
LAP 02277	CM1	7.76	A	–	–	–	–
LAP 02278	H5	3.44	C	–	–	–	–
LAP 02279	L5	5.32	C	–	–	–	–
LAP 02280	H5	17.18	C	–	–	–	–
LAP 02281	LL5	18.78	A/B	–	–	–	–
LAP 02282	LL5	4.34	B	–	–	–	–

Appendix 1. Recently described meteorites from the U.S. ANSMET expeditions.[a] *Continued..*

Name[b]	Class	Mass	Weathering	%Fa	%Fs	Pair	Ice[c]
LAP 02283	LL5	37.09	A/B	–	–	–	–
LAP 02284	L5	6.99	B	–	–	–	–
LAP 02285	LL5	4.95	C	–	–	–	–
LAP 02286	L5	6.65	B	–	–	–	–
LAP 02287	LL5	10.23	B	–	–	–	–
LAP 02288	LL5	6.33	A/B	–	–	–	–
LAP 02289	H5	9.74	C	–	–	–	–
LAP 02290	L5	7.49	C	–	–	–	–
LAP 02291	H5	3.49	C	–	–	–	–
LAP 02292	L5	16.62	B	24	20	–	–
LAP 02293	LL5	16.47	A/B	–	–	–	–
LAP 02294	H5	17.38	B/C	–	–	–	–
LAP 02295	H6	8.17	C	–	–	–	–
LAP 02296	L5	7	C	–	–	–	–
LAP 02297	H5	17.75	C	–	–	–	–
LAP 02298	L5	17.02	A/B	–	–	–	–
LAP 02299	L5	9.07	A	–	–	–	–
LAP 02300	LL5	108.45	B	–	–	–	–
LAP 02301	LL5	9.23	C	–	–	–	–
LAP 02302	CM2	7.86	B/C	1–34	–	2269	–
LAP 02303	H5	9.93	C	–	–	–	–
LAP 02304	LL5	13.46	B	–	–	–	–
LAP 02305	L5	45.2	B	–	–	–	–
LAP 02306	L5	7.4	C	–	–	–	–
LAP 02307	H5	8.42	C	–	–	–	–
LAP 02308	CM2	14.15	B/C	0–7	–	2269	–
LAP 02309	LL5	34.27	A/B	–	–	–	–
LAP 02320	LL5	2626.4	A/B	–	–	–	–
LAP 02321	LL5	1046	A	–	–	–	–
LAP 02322	LL5	452.7	A/B	–	–	–	–
LAP 02323	LL5	507.1	A/B	–	–	–	–
LAP 02324	LL5	332.4	A/B	–	–	–	–
LAP 02325	LL5	425.3	B	–	–	–	–
LAP 02326	LL5	369.3	A/B	–	–	–	–
LAP 02327	LL5	254.4	B	–	–	–	–
LAP 02328	LL5	432.2	B	–	–	–	–
LAP 02329	LL5	403.9	B	–	–	–	–
LAP 02330	LL5	218.49	A/B	–	–	–	–
LAP 02331	L5	190.88	A/B	–	–	–	–
LAP 02332	L5	168.8	C	–	–	–	–
LAP 02334	LL6	135.09	A/B	–	–	–	–
LAP 02335	LL5	180.1	A/B	–	–	–	–
LAP 02336	CM2	85.56	B	0–42	–	2336	–
LAP 02338	L4	218.25	B	–	4–21	–	–
LAP 02339	LL5	169.39	A/B	–	–	–	–
LAP 02340	LL5	65.44	B	–	–	–	–

Appendix 1. Recently described meteorites from the U.S. ANSMET expeditions.[a] *Continued..*

Name[b]	Class	Mass	Weathering	%Fa	%Fs	Pair	Ice[c]
LAP 02341	H6	103.66	A	18	16	–	–
LAP 02342	CR2	42.42	A/B	0–5	1–3	–	–
LAP 02343	LL5	14.35	A/B	–	–	–	–
LAP 02344	LL5	27.53	A	–	–	–	–
LAP 02345	LL5	9.37	B	–	–	–	–
LAP 02346	L5	14.08	A/B	–	–	–	–
LAP 02347	LL5	41.01	A/B	–	–	–	–
LAP 02348	CM2	6.86	B	0–3	–	2269	–
LAP 02349	CM2	26.01	B	0–45	–	2336	–
LAP 02350	LL5	32.34	A/B	–	–	–	–
LAP 02351	LL5	25.16	A/B	–	–	–	–
LAP 02352	LL6	56.34	A/B	–	–	–	–
LAP 02353	L6	35.37	B	–	–	–	–
LAP 02354	LL5	20.87	A/B	–	–	–	–
LAP 02355	LL4	1.71	A/B	–	–	–	–
LAP 02356	L3	11.28	B	9–31	1–18	–	–
LAP 02357	H5	39.85	B/C	–	–	–	–
LAP 02358	H5	13.43	B/C	–	–	–	–
LAP 02359	H5	31.97	B/C	–	–	–	–
LAP 02360	H5	14.57	B/C	–	–	–	–
LAP 02361	H5	6.04	B/C	–	–	–	–
LAP 02362	H5	10.49	B/C	–	–	–	–
LAP 02363	LL5	31.08	A/B	–	–	–	–
LAP 02364	LL6	24.08	A/B	–	–	–	–
LAP 02365	LL5	10.29	A/B	–	–	–	–
LAP 02366	L6	19.41	B/C	–	–	–	–
LAP 02367	LL6	1.09	A/B	–	–	–	–
LAP 02368	LL5	0.65	B	–	–	–	–
LAP 02369	H6	1.17	CE	–	–	–	–
LAP 02370	H5	1.19	C	–	–	–	–
LAP 02371	LL5	213.2	B/C	–	–	–	–
LAP 02372	LL5	181.13	B	–	–	–	–
LAP 02373	LL5	167.97	B	–	–	–	–
LAP 02374	L5	135.96	B	–	–	–	–
LAP 02375	LL5	109.91	A/B	–	–	–	–
LAP 02376	LL5	103.63	B	–	–	–	–
LAP 02377	LL5	130.5	A/B	–	–	–	–
LAP 02378	LL6	88.69	B	–	–	–	–
LAP 02379	LL6	85.51	B	–	–	–	–
LAP 02380	H6	162.78	C	–	–	–	–
LAP 02381	LL5	75.96	A	–	–	–	–
LAP 02382	Ure	74.32	B	12–21	15–18	–	–
LAP 02383	LL5	51.08	B	–	–	–	–
LAP 02384	H6	35.04	C	–	–	–	–
LAP 02385	LL5	40.68	A	–	–	–	–
LAP 02386	L5	51.39	B/C	–	–	–	–

Appendix 1. Recently described meteorites from the U.S. ANSMET expeditions.[a] *Continued.*.

Name[b]	Class	Mass	Weathering	%Fa	%Fs	Pair	Ice[c]
LAP 02387	LL5	38.76	B/C	–	–	–	–
LAP 02388	LL5	24.67	B	–	–	–	–
LAP 02389	L5	33.81	B/C	–	–	–	–
LAP 02390	LL5	26.48	B	–	–	–	–
LAP 02391	LL5	5.56	A	–	–	–	–
LAP 02392	LL5	22.51	B	–	–	–	–
LAP 02393	LL5	9.99	B	–	–	–	–
LAP 02394	L5	8.58	B	–	–	–	–
LAP 02395	LL5	18.05	B	–	–	–	–
LAP 02396	L5	28.24	B	–	–	–	–
LAP 02397	LL5	46.21	B	–	–	–	–
LAP 02398	L5	35.42	C	–	–	–	–
LAP 02399	L5	5.81	C	–	–	–	–
LAP 02400	L5	29.6	B/C	–	–	–	–
LAP 02401	L5	30.15	B/C	–	–	–	–
LAP 02402	LL5	36.37	A/B	–	–	–	–
LAP 02403	LL5	5.94	A/B	–	–	–	–
LAP 02404	L5	10.1	B/C	–	–	–	–
LAP 02405	H5	8.72	C	–	–	–	–
LAP 02406	L5	8.31	B/C	–	–	–	–
LAP 02407	LL5	40.52	A/B	–	–	–	–
LAP 02408	LL5	21.77	A/B	–	–	–	–
LAP 02409	LL5	22.9	B	–	–	–	–
LAP 02410	L5	77.48	B	–	–	–	–
LAP 02411	LL5	122.46	B	–	–	–	–
LAP 02412	LL5	172.38	B	–	–	–	–
LAP 02413	LL5	41.76	B	–	–	–	–
LAP 02414	LL5	41.96	B	–	–	–	–
LAP 02415	LL5	34.71	B/C	–	–	–	–
LAP 02416	LL5	44.25	B	–	–	–	–
LAP 02417	L5	3.08	C	–	–	–	–
LAP 02418	LL5	54.63	B	–	–	–	–
LAP 02419	LL5	17.54	B	–	–	–	–
LAP 02420	LL5	15.1	A	–	–	–	–
LAP 02421	LL5	18.9	B/C	–	–	–	–
LAP 02422	CM1	1.99	B	–	–	–	–
LAP 02423	LL5	6.23	A	–	–	–	–
LAP 02424	H5	3.62	C	–	–	–	–
LAP 02425	L5	6.05	C	–	–	–	–
LAP 02426	L5	7.56	A	–	–	–	–
LAP 02427	L5	2.56	C	–	–	–	–
LAP 02428	LL5	13.42	A	–	–	–	–
LAP 02429	H5	6.45	C	–	–	–	–
LAP 031269	Aub	12.93	B	–	0	2233	–
LAP 031370	Iron ung	8.67	B	24	21	–	–
LAP 031372	Aub	17.61	B	–	0	2233	–

Appendix 1. Recently described meteorites from the U.S. ANSMET expeditions.[a] *Continued.*.

Name[b]	Class	Mass	Weathering	%Fa	%Fs	Pair	Ice[c]
LAP 031381	Dio/Ol	1.89	B	30	25	3979	–
LAP 03569	Dio	813.7	A	27	22	–	cnm
LAP 03572	LL6	525.4	B	30	25	–	fc
LAP 03573	LL5	670.4	B	–	–	–	pve
LAP 03583	LL5	226.7	A/B	–	–	–	pve
LAP 03587	Ure	130.24	B	10–25	–	–	pp
LAP 03593	Iron ung	657.5	B	–	–	3593	tlr
LAP 03605	Iron ung	582.8	B	–	–	3593	tlr
LAP 03624	LL5	165.67	A	–	–	–	tlr
LAP 03630	Dio	175.67	A	–	24	–	pb
LAP 03631	Iron ung	164.9	B	–	–	3593	tlr
LAP 03632	Lunar B	92.57	B	32–99	27–52	2205	bpt
LAP 03637	LL5	229	A/B	–	–	–	pve
LAP 03645	R	127.56	B	7–43	–	2238	pve
LAP 03677	H5	44.75	B/C	18	16	–	cnm
LAP 03718	CM2	95.21	BE	1–48	–	3718	wbg
LAP 03719	Aub-an	62.02	B	0	0	–	wbg
LAP 03780	Aub	21.81	B/C	–	0	2233	pve
LAP 03782	Euc-ub	22.27	A/B	–	30–58	–	pp
LAP 03784	CK5	50.92	B	33	–	–	pve
LAP 03785	CM2	43.43	B	1–40	–	3718	wbg
LAP 03979	Dio/Ol	2.41	B	30	25	3979	pp
MAC 02450	H5	2493.7	C	–	–	–	bl
MAC 02451	H5	792.9	C	–	–	–	tn
MAC 02452	LL5	653.5	A/B	–	–	–	tn
MAC 02453	CK5	410.4	A	32	26	–	bl
MAC 02454	L4	1762	B	–	–	–	lmac
MAC 02455	H5	730.9	B/C	–	–	–	qm
MAC 02456	H5	624.8	B	–	–	–	tn
MAC 02457	L5	739.5	B/C	–	–	–	jschm
MAC 02458	LL6	205.63	A/B	–	–	–	bl
MAC 02459	H6	99.25	C	–	–	–	jschm
MAC 02461	L5	97.41	B/C	–	–	–	j
MAC 02462	L5	49.84	B/C	–	–	–	bl
MAC 02463	H5	33.3	C	–	–	–	hm
MAC 02464	L5	33.96	B/C	–	–	–	bl
MAC 02465	H5	29.6	C	–	–	–	qm
MAC 02466	H6	16.74	C	–	–	–	hm
MAC 02467	L3	18.87	C	4–24	–	2467	qm
MAC 02468	H5	8.66	C	–	–	–	qm
MAC 02472	L5	2.57	C	–	–	–	ci
MAC 02474	H6	3.12	C	–	–	–	qm
MAC 02475	H5	6.63	C	–	–	–	qm
MAC 02476	H5	6.8	C	–	–	–	j
MAC 02477	H5	5.85	C	–	–	–	qm
MAC 02478	H5	8.78	C	–	–	–	bl

Appendix 1. Recently described meteorites from the U.S. ANSMET expeditions.[a] *Continued.*.

Name[b]	Class	Mass	Weathering	%Fa	%Fs	Pair	Ice[c]
MAC 02479	H6	0.38	B/C	–	–	–	bl
MAC 02480	H5	1.76	CE	–	–	–	bl
MAC 02481	H6	1.04	C	–	–	–	qm
MAC 02482	H5	2.53	C	–	–	–	qm
MAC 02483	H4	0.59	C	–	–	–	qm
MAC 02485	H5	4.03	C	–	–	–	qm
MAC 02486	L4	10.48	C	–	–	–	qm
MAC 02487	H5	17.56	C	–	–	–	qm
MAC 02488	L6	20.86	C	–	–	–	hm
MAC 02489	H5	6.02	C	–	–	–	qm
MAC 02490	L5	289.5	B/C	–	–	–	qm
MAC 02491	H5	347.9	C	–	–	–	qm
MAC 02492	H5	124.45	B/C	–	–	–	lmac
MAC 02493	H5	188.78	B/C	–	–	–	jschm
MAC 02494	L4	45.73	B/C	–	–	–	qm
MAC 02495	L4	56.51	B	–	–	–	qm
MAC 02496	H4	18.86	B/C	–	–	–	qm
MAC 02498	LL5	19.84	A/B	–	–	–	lmac
MAC 02499	L6	26.05	B/C	–	–	–	bl
MAC 02500	L6	5.52	B	–	–	–	qm
MAC 02501	L3	32.38	B	1–25	–	2467	lmac
MAC 02502	H4	0.5	B	–	–	–	bl
MAC 02503	L4	7.69	B	–	–	–	ci
MAC 02504	H6	0.84	B	–	–	–	hm
MAC 02505	L5	32.22	B	–	–	–	j
MAC 02506	H5	20.99	B/C	–	–	–	j
MAC 02507	H5	12.02	B/C	–	–	–	hm
MAC 02508	H5	136.77	B/C	–	–	–	jschm
MAC 02509	L3	62.41	B	0–25	1–20	2467	sns
MAC 02510	L5	4.6	B/C	–	–	–	lmac
MAC 02511	L5	1.88	B/C	–	–	–	lmac
MAC 02513	H5	2.65	C	–	–	–	hm
MAC 02514	L5	4.49	C	–	–	–	hm
MAC 02515	H5	11.01	C	–	–	–	hm
MAC 02516	H5	2.67	C	–	–	–	qm
MAC 02517	L4	3.61	A/B	24	21	–	ci
MAC 02518	H5	17.68	C	–	–	–	j
MAC 02519	H4	9.62	B	–	4–17	–	qm
MAC 02520	H6	9.46	C	–	–	–	j
MAC 02523	LL5	3.54	B/C	–	–	–	lmac
MAC 02524	H6	2.38	C	–	–	–	hm
MAC 02525	H6	0.24	B	–	–	–	bl
MAC 02526	LL6	0.22	B	–	–	–	tn
MAC 02528	CV3	5.61	A/B	0–3	0–3	–	bl
MAC 02529	H6	3.02	C	–	–	–	bl
MAC 02540	LL6	97.97	A/B	–	–	–	bl

Appendix 1. Recently described meteorites from the U.S. ANSMET expeditions.[a] *Continued.*.

Name[b]	Class	Mass	Weathering	%Fa	%Fs	Pair	Ice[c]
MAC 02541	H5	75.6	B/C	–	–	–	qm
MAC 02542	H5	158.07	B/CE	–	–	–	tn
MAC 02543	LL5	137.95	A/B	–	–	–	tm/umac
MAC 02544	LL6	189.09	A/B	–	–	–	bl
MAC 02545	LL6	47.49	A/B	–	–	–	bl
MAC 02546	LL5	178.13	A/BE	–	–	–	mtl
MAC 02547	H5	377.7	B/C	–	–	–	lmac
MAC 02548	L6	34.3	B/C	–	–	–	lmac
MAC 02549	LL5	87.24	A/B	–	–	–	bl
MAC 02556	E3	1.41	C	–	0–1	–	qm
MAC 02560	H5	3.95	C	–	–	–	hm
MAC 02561	H5	5.76	C	–	–	–	hm
MAC 02563	H5	20.42	C	–	–	–	schm
MAC 02564	H5	0.4	B	–	–	–	bl
MAC 02565	H5	0.69	B	–	–	–	hm
MAC 02566	H5	11.18	C	–	–	–	hm
MAC 02567	L4	8.04	A/B	–	–	–	hm
MAC 02568	L5	14.4	A/B	–	–	–	hm
MAC 02569	H5	92.13	B	–	–	–	bl
MAC 02570	L4	14.13	B	–	–	–	ssi
MAC 02571	H5	9.99	B/C	–	–	–	qm
MAC 02572	H5	9.55	B/C	–	–	–	qm
MAC 02573	L4	5.89	B	–	–	–	qm
MAC 02574	L5	10.5	A/B	–	–	–	lmac
MAC 02575	L5	2.79	B/C	–	–	–	qm
MAC 02576	L5	12.92	B/CE	–	–	–	oh
MAC 02577	H5	4.56	B/C	–	–	–	qm
MAC 02579	H5	18.76	B/C	–	–	–	bl
MAC 02580	H5	19.42	C	–	–	–	hm
MAC 02581	L5	0.43	B	–	–	–	bl
MAC 02582	H6	0.32	B	–	–	–	qm
MAC 02584	L4	15.65	A/B	–	–	–	qm
MAC 02585	L4	8.53	C	–	–	–	hm
MAC 02586	H5	2.52	C	–	–	–	tm
MAC 02587	H6	0.92	B	–	–	–	hm
MAC 02589	LL5	0.66	B	–	–	–	bl
MAC 02590	LL6	58.3	B	–	–	–	hm
MAC 02591	LL6	35.23	B	–	–	–	bl
MAC 02592	L4	48.68	A/B	25–28	2–22	–	j
MAC 02593	L5	36.17	B/C	–	–	–	bl
MAC 02594	L4	64.02	B	–	–	–	lmac
MAC 02595	L5	72.9	B/C	–	–	–	bl
MAC 02596	H5	34.98	C	–	–	–	hm
MAC 02597	L5	58.15	A/B	–	–	–	tmac
MAC 02598	H6	0.61	B	–	–	–	tm
MAC 02599	L5	1.58	C	–	–	–	tm

Appendix 1. Recently described meteorites from the U.S. ANSMET expeditions.[a] *Continued.*.

Name[b]	Class	Mass	Weathering	%Fa	%Fs	Pair	Ice[c]
MAC 02600	H5	281	C	–	–	–	qm
MAC 02601	L4	328.3	A/B	–	–	–	lmac
MAC 02602	H5	691.7	C	–	–	–	qm
MAC 02610	H5	2.6	C	–	–	–	hm
MAC 02611	H5	7.79	C	–	–	–	qm
MAC 02612	H5	19.03	C	–	–	–	qm
MAC 02613	LL5	1.37	B/C	–	–	–	tm
MAC 02614	H5	5.88	C	–	–	–	hm
MAC 02616	H5	7.25	C	–	–	–	qm
MAC 02617	H6	5.31	C	–	–	–	lmac
MAC 02618	H5	3.98	C	–	–	–	qm
MAC 02619	L4	8.06	CE	–	–	–	ci
MAC 02620	L5	3.03	C	–	–	–	qm
MAC 02621	H5	44.8	C	–	–	–	qm
MAC 02622	H5	42.95	C	–	–	–	lmac
MAC 02623	L5	30.54	C	–	–	–	qm
MAC 02624	L4	3.86	C	–	–	–	ci
MAC 02625	H5	10.02	C	–	–	–	qm
MAC 02626	L4	9.35	C	–	–	–	qm
MAC 02627	L5	10.31	C	–	–	–	qm
MAC 02628	H5	0.07	B	–	–	–	tn
MAC 02629	L4	4.65	C	–	–	–	tn
MAC 02641	H5	2.58	C	–	–	–	tm
MAC 02642	L5	1.78	C	–	–	–	bl
MAC 02643	H5	9.59	C	–	–	–	qm
MAC 02644	H5	23.27	C	–	–	–	bl
MAC 02645	H5	3.18	C	–	–	–	qm
MAC 02646	H6	7.63	C	–	–	–	hm
MAC 02647	H6	2.59	C	–	–	–	tm
MAC 02648	H5	5.15	C	–	–	–	qm
MAC 02649	H6	0.2	C	–	–	–	bl
MAC 02650	H5	0.36	B/C	–	–	–	tn
MAC 02651	H6	0.36	B/C	–	–	–	bl
MAC 02652	H6	0.55	B/C	–	–	–	bl
MAC 02653	H6	0.21	B/C	–	–	–	bl
MAC 02654	H6	0.24	B/C	–	–	–	bl
MAC 02655	H6	0.6	B/C	–	–	–	bl
MAC 02656	H5	0.48	B/C	–	–	–	bl
MAC 02657	H4	0.45	B/C	–	–	–	bl
MAC 02658	CM2	1.27	B	0–52	–	–	bl
MAC 02659	LL5	1.02	B/C	–	–	–	bl
MAC 02660	L5	3.81	B/C	–	–	–	bl
MAC 02661	LL6	2.69	A/B	–	–	–	tm
MAC 02662	L5	5.4	C	–	–	–	bl
MAC 02663	L5	4.3	B/C	–	–	–	qm
MAC 02664	L5	3.02	B/C	–	–	–	tm

Appendix 1. Recently described meteorites from the U.S. ANSMET expeditions.[a] *Continued.*.

Name[b]	Class	Mass	Weathering	%Fa	%Fs	Pair	Ice[c]
MAC 02665	LL6	2.16	A/B	–	–	–	tm
MAC 02668	H5	11.26	C	–	–	–	tm
MAC 02669	LL5	1.42	A/B	–	–	–	bl
MAC 02670	H5	71.55	B/C	–	–	–	bl
MAC 02671	H5	101.39	B/C	–	–	–	bl
MAC 02672	H5	53.66	B/C	–	–	–	tm
MAC 02673	L5	17.2	A/B	–	–	–	tm
MAC 02674	L5	20.72	B/C	–	–	–	bl
MAC 02675	Metal-rich ch	22.85	B	–	1–4	–	bl
MAC 02676	LL6	199.3	A/B	30	25	–	bl
MAC 02677	LL5	299.7	A/B	30	25	–	fi
MAC 02678	H5	55.68	B/C	–	–	–	tm
MAC 02679	H5	17.73	B/C	–	–	–	bl
MAC 02680	LL5	10.49	A/B	–	–	–	bl
MAC 02681	H5	3.8	B/C	–	–	–	tm
MAC 02682	LL5	3.4	A/B	–	–	–	bl
MAC 02683	LL5	9.92	A/B	–	–	–	tm
MAC 02684	L5	1.81	A/B	–	–	–	bl
MAC 02685	H5	2.36	B	–	–	–	tm
MAC 02686	L5	0.18	B	–	–	–	bl
MAC 02687	H5	14.15	B/C	–	–	–	tm
MAC 02688	H5	0.77	B	–	–	–	bl
MAC 02689	L5	0.11	B	–	–	–	bl
MAC 02690	L6	0.38	C	–	–	–	bl
MAC 02691	H4	2.08	C	–	–	–	bl
MAC 02692	LL6	0.24	C	–	–	–	bl
MAC 02693	H5	0.16	C	–	–	–	bl
MAC 02694	H6	0.12	C	–	–	–	bl
MAC 02695	H6	0.77	C	–	–	–	qm
MAC 02696	H6	0.31	C	–	–	–	tn
MAC 02698	LL5	0.15	C	–	–	–	bl
MAC 02699	H6	0.4	C	–	–	–	bl
MAC 02700	H6	10.68	C	–	–	–	bl
MAC 02701	CM2	10.11	BE	0–41	1–3	–	bl
MAC 02702	H5	4.45	C	–	–	–	tm
MAC 02704	H5	12.55	C	–	–	–	tm
MAC 02705	H5	57.97	C	–	–	–	bl
MAC 02706	LL5	17.01	B/C	–	–	–	tn
MAC 02707	LL5	7.94	B/C	–	–	–	bl
MAC 02708	H5	1.19	B	–	–	–	bl
MAC 02709	LL6	0.28	B	–	–	–	tm
MAC 02710	H5	0.43	B	–	–	–	bl
MAC 02711	L5	2.19	C	–	–	–	qm
MAC 02712	L4	1.06	B	–	–	–	bl
MAC 02713	H6	1.74	C	–	–	–	qm

Appendix 1. Recently described meteorites from the U.S. ANSMET expeditions.[a] *Continued.*.

Name[b]	Class	Mass	Weathering	%Fa	%Fs	Pair	Ice[c]
MAC 02714	H5	0.25	B	–	–	–	bl
MAC 02715	L5	1.11	C	–	–	–	bl
MAC 02716	H6	4.53	C	–	–	–	bl
MAC 02717	L5	0.97	B	–	–	–	tm
MAC 02718	L6	1.23	C	–	–	–	bl
MAC 02719	H6	0.2	B	–	–	–	bl
MAC 02720	H6	0.09	B	–	–	–	bl
MAC 02721	H5	0.25	B	–	–	–	qm
MAC 02722	L5	1.44	C	–	–	–	tm
MAC 02723	H5	11.84	C	–	–	–	qm
MAC 02724	H6	5.55	C	–	–	–	hm
MAC 02725	L5	2.39	C	–	–	–	j
MAC 02727	L5	1.3	C	–	–	–	qm
MAC 02728	H6	2.24	C	–	–	–	hm
MAC 02729	LL6	7.51	A/B	31	26	–	hm
MAC 02730	L4	10.12	B/C	–	–	–	qm
MAC 02731	LL5	13.34	B	–	–	–	hm
MAC 02732	L5	6.92	C	–	–	–	lmac
MAC 02733	H6	2.87	C	–	–	–	qm
MAC 02734	H4	3.25	B/C	–	–	–	qm
MAC 02735	LL6	10.81	A/B	–	–	–	umac
MAC 02736	L4	25.86	B	–	–	–	ci
MAC 02737	H5	26.72	C	–	–	–	j
MAC 02738	L4	41.44	B	–	–	–	lmac
MAC 02739	H5	49.21	C	–	–	–	qm
MAC 02740	L4	281.4	B/C	–	–	–	lmac
MAC 02741	H5	167.09	B/C	–	–	–	jschm
MAC 02744	H5	6.11	B/C	–	–	–	hm
MAC 02745	H6	16.31	B/C	–	–	–	lmac
MAC 02746	LL5	189.4	A/B	–	–	–	tm
MAC 02747	EL4	140.71	B/C	–	1–4	–	bl
MAC 02748	LL5	18.52	A/B	–	–	–	bl
MAC 02749	L4	12.76	B/C	–	–	–	tm
MAC 02755	CM2	3.52	B	1–40	–	–	bl
MAC 02760	H5	0.18	B	–	–	–	bl
MAC 02761	H5	0.3	B	–	–	–	bl
MAC 02762	H6	0.05	B	–	–	–	tm
MAC 02763	H6	0.71	B	–	–	–	bl
MAC 02764	H5	1.03	B	–	–	–	tm
MAC 02765	L5	0.69	B	–	–	–	bl
MAC 02767	L4	0.77	B	–	–	–	tn
MAC 02768	L5	0.97	B	–	–	–	tn
MAC 02769	H6	0.11	B	–	–	–	bl
MAC 02770	L4	8.46	C	–	–	–	tn
MAC 02771	L5	1.44	C	–	–	–	tn
MAC 02772	L5	0.7	B	–	–	–	bl

Appendix 1. Recently described meteorites from the U.S. ANSMET expeditions.[a] *Continued.*.

Name[b]	Class	Mass	Weathering	%Fa	%Fs	Pair	Ice[c]
MAC 02773	L5	6.7	B	–	–	–	tn
MAC 02774	H5	0.34	B	–	–	–	bl
MAC 02775	L4	0.61	B	–	–	–	bl
MAC 02776	H6	0.28	B	–	–	–	bl
MAC 02777	H5	0.15	B	–	–	–	bl
MAC 02778	L6	0.14	B	–	–	–	bl
MAC 02779	CM2	0.3	B	1–39	–	2779	bl
MAC 02780	L6	0.73	B	–	–	–	bl
MAC 02781	H5	0.17	B	–	–	–	bl
MAC 02782	L4	10	B/C	–	–	–	tn
MAC 02783	L4	0.29	B	–	–	–	tn
MAC 02784	L4	2.69	B/C	–	–	–	tn
MAC 02785	L4	1.29	B/C	–	–	–	tn
MAC 02786	L4	1.23	B/C	–	–	–	tn
MAC 02787	H5	0.7	B	–	–	–	qm
MAC 02789	H6	0.55	B	–	–	–	tm
MAC 02790	LL5	1.83	B	–	–	–	bl
MAC 02791	LL5	6.84	B/C	–	–	–	bl
MAC 02792	LL5	6.6	B/C	–	–	–	tm
MAC 02793	H5	12.42	C	–	–	–	qm
MAC 02794	H5	4.61	C	–	–	–	bl
MAC 02795	H5	3.58	C	–	–	–	qm
MAC 02796	H5	15.29	C	–	–	–	hm
MAC 02797	H5	0.87	B	–	–	–	tm
MAC 02798	H5	43.54	C	–	–	–	bl
MAC 02799	H5	21.48	C	–	–	–	schm
MAC 02801	LL5	13.85	A/B	–	–	–	bl
MAC 02802	H5	4.99	C	–	–	–	hm
MAC 02803	H5	0.09	B	–	–	–	qm
MAC 02804	H5	0.06	B	–	–	–	bl
MAC 02805	H5	0.27	B	–	–	–	tm
MAC 02806	H5	17.37	C	–	–	–	qm
MAC 02807	L4	7.57	C	–	–	–	qm
MAC 02808	L5	5.28	B/C	–	–	–	bl
MAC 02809	LL5	0.57	B	–	–	–	bl
MAC 02810	H5	23.79	B/C	–	–	–	hm
MAC 02811	L5	25.45	A/B	–	–	–	bl
MAC 02812	H4	46.01	B	–	–	–	qm
MAC 02813	H5	13.36	B/C	–	–	–	tm
MAC 02815	L4	4.9	B/C	–	–	–	qm
MAC 02816	H4	3.62	B/C	–	–	–	qm
MAC 02817	LL5	23.02	A/B	–	–	–	bl
MAC 02818	L5	3.76	B/C	–	–	–	qm
MAC 02819	H4	2.39	B	–	–	–	qm
MAC 02820	CM1-2	0.21	B	2	–	–	bl
MAC 02821	H5	4.54	C	–	–	–	jschm

Appendix 1. Recently described meteorites from the U.S. ANSMET expeditions.[a] *Continued.*.

Name[b]	Class	Mass	Weathering	%Fa	%Fs	Pair	Ice[c]
MAC 02823	H5	0.04	B	–	–	–	bl
MAC 02824	H5	1.61	C	–	–	–	qm
MAC 02825	H5	4.62	C	–	–	–	qm
MAC 02826	H5	7.51	C	–	–	–	qm
MAC 02827	H5	0.16	B	–	–	–	bl
MAC 02828	L5	1.93	B/C	–	–	–	bl
MAC 02829	H5	55.07	C	–	–	–	bl
MAC 02840	H5	6.51	B/C	–	–	–	bl
MAC 02841	H5	8.12	B/C	–	–	–	qm
MAC 02842	H5	28.06	B/C	–	–	–	bl
MAC 02843	H5	7.45	B/C	–	–	–	qm
MAC 02844	H5	18.06	B/C	–	–	–	tm
MAC 02845	LL5	4.25	A/B	–	–	–	bl
MAC 02846	H5	10.14	B/C	–	–	–	tm
MAC 02847	H5	4.12	B/C	–	–	–	qm
MAC 02850	L5	2.93	B	–	–	–	bl
MAC 02851	LL5	1.38	A	–	–	–	bl
MAC 02852	LL5	0.23	B	–	–	–	bl
MAC 02853	H6	3.37	C	–	–	–	hm
MAC 02854	CM2	0.14	C	1–2	–	2779	bl
MAC 02855	H5	0.19	B	–	–	–	bl
MAC 02856	H5	0.17	B	–	–	–	bl
MAC 02857	L5	1.87	C	–	–	–	bl
MAC 02858	H6	2.62	C	–	–	–	bl
MAC 02859	L4	1.05	B	–	–	–	ci
MAC 02860	L5	0.22	B	–	–	–	bl
MAC 02861	H6	1.66	B	–	–	–	hm
MAC 02862	H5	4.7	B/C	–	–	–	qm
MAC 02863	L4	0.81	B	–	–	–	tn
MAC 02865	L4	0.13	B	–	–	–	bl
MAC 02866	H6	0.6	B	–	–	–	tm
MAC 02867	H6	2.79	B	–	–	–	qm
MAC 02869	CM1	0.36	B	–	–	–	bl
MAC 02870	H5	16.97	B/C	–	–	–	hm
MAC 02871	L5	13.46	A/B	–	–	–	tm
MAC 02872	L4	12.59	B	–	–	–	qm
MAC 02873	H6	38.7	B/C	–	–	–	bl
MAC 02874	L5	96.76	B	–	–	–	bl
MAC 02875	H5	80.85	B/C	–	–	–	bl
MAC 02876	H5	30.33	B	–	–	–	bl
MAC 02877	L5	23.47	B	–	–	–	bl
MAC 02878	H6	19.52	B/C	–	–	–	schm
MAC 02879	H5	7.53	B/C	–	–	–	tm
MAC 02880	H5	0.61	B	–	–	–	qm
MAC 02881	H6	0.45	B	–	–	–	bl
MAC 02882	L5	1.72	C	–	–	–	bl

Appendix 1. Recently described meteorites from the U.S. ANSMET expeditions.[a] *Continued.*.

Name[b]	Class	Mass	Weathering	%Fa	%Fs	Pair	Ice[c]
MAC 02883	H5	0.07	B	–	–	–	qm
MAC 02884	L5	1.52	C	–	–	–	bl
MAC 02885	H5	2.05	C	–	–	–	bl
MAC 02887	L4	3.34	B	–	–	–	ci
MAC 02888	L4	1.27	C	–	–	–	bl
MAC 02889	L4	3.53	A	–	–	–	bl
MAC 02890	H5	18.91	B/C	–	–	–	ci
MAC 02891	H5	14.18	B/C	–	–	–	ci
MAC 02892	H5	52.09	B/C	–	–	–	j
MAC 02893	L5	21.38	B/C	–	–	–	bl
MAC 02894	H5	18.22	B/C	–	–	–	hm
MAC 02896	H6	1.84	B	–	–	–	bl
MAC 02897	H5	1.52	B	–	–	–	bl
MAC 02898	LL5	5.22	B/C	–	–	–	ci
MAC 02899	H6	74.73	B/C	–	–	–	tm
MAC 02900	H5	33.72	B/C	–	–	–	qm
MAC 02901	H5	28.62	B/C	–	–	–	hm
MAC 02902	L5	23.57	B/C	–	–	–	qm
MAC 02903	H5	31.99	C	–	–	–	qm
MAC 02904	H5	33.87	B/C	–	–	–	tm
MAC 02905	L4	9.77	B/C	–	–	–	qm
MAC 02906	H5	5.14	B/C	–	–	–	hm
MAC 02907	L4	18.71	B	–	–	–	qm
MAC 02908	LL5	16.6	A/B	–	–	–	lmac
MAC 02909	LL5	2.67	A/B	–	–	–	lmac
MAC 02910	LL5	2.24	A/B	–	–	–	lmac
MAC 02911	L4	4.86	B/C	–	–	–	qm
MAC 02912	L5	2.7	B/C	–	–	–	tn
MAC 02913	H6	0.81	B	–	–	–	tn
MAC 02914	H5	0.35	B	–	–	–	tn
MAC 02915	LL5	308.1	A/B	–	–	–	bl
MAC 02916	L5	96.38	B/C	–	–	–	lmac
MAC 02917	L3	222.16	B	9–27	2–24	–	bl
MAC 02918	L4	156.95	B/C	–	–	–	lmac
MAC 02919	L5	265.1	C	–	–	–	tn
MAC 02920	L4	106.68	B/C	–	–	–	qm
MAC 02921	L4	177.2	B/C	–	–	–	lmac
MAC 02922	LL5	149.16	A/B	–	–	–	qm
MAC 02923	L5	188.37	B/C	–	–	–	qm
MAC 02924	H5	194.96	B/C	–	–	–	qm
MAC 02925	H5	65.5	B/C	–	–	–	lmac
MAC 02926	H5	72.35	B/C	–	–	–	lmac
MAC 02928	H5	53.78	B/C	–	–	–	hm
MAC 02929	L4	65.11	B	–	–	–	lmac
MAC 02930	L4	9.03	B/C	–	–	–	qm
MAC 02931	H5	29.34	B/C	–	–	–	ci

Appendix 1. Recently described meteorites from the U.S. ANSMET expeditions.[a] *Continued.*.

Name[b]	Class	Mass	Weathering	%Fa	%Fs	Pair	Ice[c]
MAC 02932	LL5	25.65	A/B	–	–	–	lmac
MAC 02933	LL5	24.94	A/B	–	–	–	lmac
MAC 02934	LL5	13.24	A/B	–	–	–	lmac
MAC 02935	L5	10.12	B/C	–	–	–	lmac
MAC 02936	H5	8.01	B/C	–	–	–	qm
MAC 02937	H5	7.18	B/C	–	–	–	qm
MAC 02938	LL5	9.83	A/B	–	–	–	lmac
MAC 02939	H5	8.21	B/C	–	–	–	lmac
MAC 02940	LL5	19.16	A/B	–	–	–	lmac
MAC 02942	H5	13.55	B/C	–	–	–	qm
MAC 02943	L4	2.12	B	–	–	–	qm
MAC 02944	H4	4.7	B/C	–	–	–	qm
MAC 02945	H5	7.36	B/C	–	–	–	qm
MAC 02946	L5	44.13	B/C	–	–	–	qm
MAC 02947	L4	16.03	B	–	–	–	lmac
MAC 02948	L4	15.82	B/C	–	–	–	qm
MAC 02949	L4	18.02	B/C	–	–	–	hm
MAC 02950	L5	2.4	C	–	–	–	qm
MAC 02951	L5	6.29	C	–	–	–	qm
MAC 02953	H6	15.09	C	–	–	–	qm
MAC 02954	L5	13.16	C	–	–	–	qm
MAC 02955	H5	0.69	C	–	–	–	hm
MAC 02956	H4	15.06	C	–	–	–	qm
MAC 02957	L4	12.48	B	–	–	–	lmac
MAC 02958	H5	1.41	B	–	–	–	ci
MAC 02959	H5	5.45	B	–	–	–	hm
MAC 02960	LL5	3.74	B/C	–	–	–	hm
MAC 02961	LL6	0.29	B	–	–	–	tm
MAC 02962	H5	13.18	C	–	–	–	hm
MAC 02964	H6	2.32	C	–	–	–	qm
MIL 03346	Nak	715.2	B	–	21–49	–	–
MIL 03356	IVA	443.5	A	–	–	–	–
MIL 03368	Dio	80.93	B/C	29	27	–	–
MIL 03369	IIIC	119.96	A	–	–	–	mit
PCA 02001	L5	354	C	–	–	–	N 40
PCA 02002	L5	451.3	C	–	–	–	N 40
PCA 02003	H5	308.6	C	–	–	–	N 40
PCA 02004	L5	401.9	B	–	–	–	N 40
PCA 02005	L5	220.46	B	–	–	–	N 40
PCA 02006	H5	661.6	C	–	–	–	N 40
PCA 02020	LL5	77.98	A/B	–	–	–	N 40
PCA 02021	LL6	74.57	A/B	–	–	–	N 40
PCA 02022	LL5	34.66	A/B	–	–	–	N 40
PCA 02023	LL6	67.11	A/B	–	–	–	N 40
PCA 02024	LL5	44.82	A/B	–	–	–	N 40
PCA 02025	H5	78.99	B	–	–	–	N 40

Appendix 1. Recently described meteorites from the U.S. ANSMET expeditions.[a] *Continued.*.

Name[b]	Class	Mass	Weathering	%Fa	%Fs	Pair	Ice[c]
PCA 02026	LL6	106.79	A/B	–	–	–	N 40
PCA 02027	LL5	98.44	A/B	–	–	–	N 40
PCA 02028	H5	24.46	B	–	–	–	N 40
PCA 02029	L6	10.39	B/C	–	–	–	N 40
PCA 02030	H5	13.76	B/C	–	–	–	N 40
PCA 02031	H6	3.73	C	–	–	–	N 40
PCA 02032	H5	46.4	C	–	–	–	N 40
PCA 02033	L5	34.59	A/B	–	–	–	N 40
PCA 02034	H5	2.17	C	–	–	–	N 40
PCA 02035	L5	29.09	B/C	–	–	–	N 40
PCA 02036	H5	22.39	B/C	–	–	–	N 40
PCA 02037	LL5	8.84	B	–	–	–	N 40
PCA 02038	H5	1.66	B/C	–	–	–	N 40
PCA 02039	H5	9.41	B	18	16	–	N 40
PCA 02040	H5	15.92	C	–	–	–	N 40
PCA 02041	L5	4.03	B/C	–	–	–	N 40
PCA 02042	LL6	14.44	B	–	–	–	N 40
PCA 02043	LL5	9.18	B	–	–	–	N 40
PCA 02044	L4	1.21	A/B	25	21	–	N 40
PCA 02045	H5	23.76	C	–	–	–	N 40
PCA 02046	H5	25.47	C	–	–	–	N 40
PCA 02047	L5	4.71	C	–	–	–	N 40
PCA 02048	L6	4.04	C	–	–	–	N 40
PCA 02049	LL6	15.21	B	–	–	–	–
PCA 02050	CM2	9.78	B	0–40	–	2011	N 40
PCA 02051	H5	20.76	C	–	–	–	N 40
PCA 02052	H5	43.37	A/B	18	17	–	N 40
PCA 02053	LL5	33.85	B	–	–	–	N 40
PCA 02054	H5	2.16	C	–	–	–	N 40
PCA 02055	LL5	27.14	B	–	–	–	sw1
PCA 02056	LL6	40.79	A/B	–	–	–	N 40
PCA 02057	H6	2.28	C	–	–	–	N 40
PCA 02058	L6	6.64	C	–	–	–	N 40
PCA 02059	L5	19.41	B/C	–	–	–	N 40
PCA 02065	How	3.63	B	–	23–57	2009	N 40
PCA 02066	How	57.07	B/C	–	24–58	2009	N 40
PCA 02067	H5	4751.3	C	–	–	–	N 40
PCA 02068	LL6	640.1	B	–	–	–	N 40
PCA 02069	LL6	244.2	A/B	–	–	–	N 40
PCA 02070	H5	518	A/B	18	16	–	N 40
PCA 02071	L5	1175	B/C	–	–	–	N 40
PCA 02072	LL6	1021.9	B	–	–	–	N 40
PCA 02073	LL5	259.6	A/B	–	–	–	me
PCA 02074	LL5	147.03	A/B	–	–	–	N 40
PCA 02075	L5	224.76	B/C	–	–	–	N 40
PCA 02076	L5	96.65	B	–	–	–	N 40

Appendix 1. Recently described meteorites from the U.S. ANSMET expeditions.[a] *Continued.*.

Name[b]	Class	Mass	Weathering	%Fa	%Fs	Pair	Ice[c]
PCA 02077	LL6	113.92	B	–	–	–	N 40
PCA 02078	LL5	25.61	B/C	–	–	–	N 40
PCA 02079	H5	2.99	C	–	–	–	N 40
PCA 02080	L6	11.5	C	–	–	–	N 40
QUE 02100	LL5	1007.5	B	–	–	–	gni
QUE 02101	LL5	0.96	B	–	–	–	gni
QUE 02102	LL5	7.39	B	–	–	–	mm
QUE 02103	H5	4.33	C	–	–	–	gni
QUE 02104	H5	9.86	C	–	–	–	sm
QUE 02105	LL6	0.77	B	–	–	–	gni
QUE 02106	H6	4.38	C	–	–	–	sm
QUE 02107	H5	18.01	C	–	–	–	gni
QUE 02108	LL5	0.79	B	–	–	–	gni
QUE 02109	H5	5.28	C	–	–	–	sm
QUE 02110	H5	136.62	B/C	–	–	–	rbm
QUE 02111	H5	19.51	B/C	–	–	–	sm
QUE 02112	LL4	12.12	A/B	–	–	–	gni
QUE 02113	H5	6.42	B/C	–	–	–	wsm
QUE 02114	H5	12.97	B/C	–	–	–	gni
QUE 02115	H6	9.04	B/C	–	–	–	rbm
QUE 02116	H5	4.62	B/C	18	16	–	sm
QUE 02117	L4	4.71	A/B	–	–	–	gni
QUE 02118	LL5	4.61	A/B	–	–	–	gni
QUE 02119	LL5	3.88	A/B	–	–	–	mm
QUE 02120	LL5	15.47	A/B	–	–	–	mm
QUE 02121	LL4	18.1	A/B	–	–	–	gni
QUE 02122	LL4	5.06	A/B	–	–	–	mm
QUE 02123	LL4	10.36	A/B	–	–	–	gni
QUE 02124	H6	11.25	B/C	–	–	–	sm
QUE 02125	LL4	17.18	A/B	–	–	–	gni
QUE 02126	LL5	3.8	A/B	–	–	–	gni
QUE 02127	LL4	5.43	B	–	–	–	mm
QUE 02128	LL4	4.76	A/B	–	–	–	gni
QUE 02129	H4	15.36	B	18	16	–	gni
QUE 02130	LL5	1.26	A/B	–	–	–	gni
QUE 02131	LL5	11.55	A/B	–	–	–	gni
QUE 02132	L5	5.39	B/C	–	–	–	sm
QUE 02133	H6	12.85	B/C	–	–	–	sm
QUE 02134	LL4	8.68	B	–	–	–	gni
QUE 02135	H6	9.59	B/C	–	–	–	gni
QUE 02136	H5	1.82	B/C	–	–	–	gni
QUE 02137	LL4	5.49	A/B	–	–	–	gni
QUE 02138	H5	10.56	B/C	–	–	–	sm
QUE 02139	LL5	1.3	A/B	–	–	–	gni
QUE 02140	H5	14.79	C	–	–	–	sm
QUE 02141	LL5	19.69	B	–	–	–	gni

Appendix 1. Recently described meteorites from the U.S. ANSMET expeditions.[a] *Continued.*.

Name[b]	Class	Mass	Weathering	%Fa	%Fs	Pair	Ice[c]
QUE 02142	H5	2.19	C	–	–	–	gni
QUE 02143	H5	7.86	C	–	–	–	sm
QUE 02144	H5	5.93	C	–	–	–	sm
QUE 02145	L4	0.83	C	–	–	–	mm
QUE 02146	L6	1.2	C	–	–	–	sm
QUE 02147	L5	4.6	C	–	–	–	gni
QUE 02148	H6	12.14	C	–	–	–	sm
QUE 02149	LL5	1.32	C	–	–	–	gni
QUE 02158	Dio	8.59	B	–	22	99050	mm
QUE 02160	LL5	286.6	A/B	–	–	–	mm
QUE 02161	L5	91.44	A/B	–	–	–	gni
QUE 02162	H5	26.78	B	–	–	–	sm
QUE 02163	H6	122.62	B/C	–	–	–	gni
QUE 02164	H5	82.82	B/C	–	–	–	gni
QUE 02165	H5	50.99	C	–	–	–	mm
QUE 02166	H5	60.66	B/C	–	–	–	sm
QUE 02167	L5	73.34	B/C	–	–	–	sm
QUE 02168	H5	50.63	B/C	–	–	–	mm
QUE 02169	LL4	58.48	A/B	–	–	–	mm
QUE 02170	LL6	24.9	B/C	–	–	–	gni
QUE 02171	H5	15.35	C	–	–	–	sm
QUE 02172	L5	11.5	B/C	–	–	–	gni
QUE 02173	H5	6.04	C	–	–	–	sm
QUE 02174	H5	5.88	C	–	–	–	sm
QUE 02175	H5	9.94	C	–	–	–	sm
QUE 02177	LL5	1.9	B/C	–	–	–	gni
QUE 02178	LL5	0.55	B	–	–	–	gni
QUE 02179	L5	3.17	B	–	–	–	gni
QUE 02180	LL4	51.54	A/B	–	–	–	gni
QUE 02181	H5	25.46	B	–	–	–	sm
QUE 02182	H5	29.1	B	–	–	–	rbm
QUE 02183	LL5	26.66	A/B	–	–	–	gni
QUE 02184	LL5	14.45	A/B	–	–	–	mm
QUE 02185	LL5	15.23	A/B	–	–	–	mm
QUE 02186	H5	37.88	B	–	–	–	rbm
QUE 02187	L5	9.66	B	–	–	–	gni
QUE 02188	H5	29.23	B	–	–	–	gni
QUE 02189	LL4	27.09	A/B	–	–	–	gni
RBT 03522	CK5	282.4	B	27–30	–	–	–
RBT 03523	CM2	6.7	B	1–57	–	–	–
RBT 03530	H5	23.13	C	–	–	–	–
RBT 03531	H5	72.4	C	–	–	–	–
RBT 03532	LL5	7.8	B	–	–	–	–
RBT 03533	LL5	42.6	B	–	–	–	–
RBT 03534	H5	19	B	–	–	–	–
RBT 03535	H6	9.87	C	–	–	–	–

Appendix 1. Recently described meteorites from the U.S. ANSMET expeditions.[a] *Continued.*.

Name[b]	Class	Mass	Weathering	%Fa	%Fs	Pair	Ice[c]
RBT 03536	H6	7.25	B	–	–	–	–
RBT 03537	L5	6.77	B/C	–	–	–	–
RBT 03538	L6	11.77	B/C	–	–	–	–
SAN 03480	H5	121.5	C	–	–	–	mw
SAN 03481	L5	61.75	C	–	–	–	sc
SAN 03482	LL5	160.17	B/C	–	–	–	mw
SAN 03483	LL5	137.94	B	–	–	–	sc
SAN 03484	LL5	183.66	B	–	–	–	mw
SAN 03485	LL5	76.08	B	–	–	–	mw
SAN 03486	H5	79.36	C	–	–	–	sc
SAN 03487	LL4	57.06	A/B	–	–	–	sc
SAN 03488	L5	89.42	C	–	–	–	sc
SAN 03489	Euc-br	29.19	A/B	–	48–59	–	sc
SAN 03500	H5	17.33	C	–	–	–	sc
SAN 03501	LL4	35.76	B/C	–	–	–	sc
SAN 03502	L5	27.48	C	–	–	–	sc

Appendix 1. Recently described meteorites from the U.S. ANSMET expeditions.[a] *Continued.*.

Name[b]	Class	Mass	Weathering	%Fa	%Fs	Pair	Ice[c]
SAN 03503	LL5	43.7	B	–	–	–	mw
SAN 03504	L5	7.35	C	–	–	–	sc
SAN 03505	LL5	42.21	B	–	–	–	sc
SAN 03506	LL4	46.82	B	–	–	–	sc
SAN 03507	LL5	44.3	B	–	–	–	sc
SAN 03508	LL5	67.79	A/B	–	–	–	sc
SAN 03509	LL5	22.71	B	–	–	–	sc

[a]See "Notes to Table 2" in Meteoritical Bulletin No. 79 (1996) for explanation of columns.

[b]Abbreviations for meteorite names: LAP: La Paz Icefield; MAC: MacAlpine Hills; PCA: Pecora Escarpment; QUE: Queen Alexandra Range; RBT: Roberts Massif; SAN: Sandford Cliffs.

[c]Icefield names: bl: Bottom Lip; bpt: Bridle Path Trail; ci: Camp Ice; cnm: Canyonero Mesa (West Paradise Palms); drm: Dominion Range Main; fc: Forbidden Cove; fi: Fuel Ice; gni: Goodwin Nunataks; hm: Harvaine Moraine; j: Jacobs; jschm: Jacobs, pve: Pinnacle Vista Estates; qm: Quiche Moraine; rbm: Round Bottom Moraine; sc: Sandford Cliffs; schm: Schuttaine Moraine; sm: Scoraine Moraine; sns: snowshow ice; ssi: Supersonic Icefield; sw1: Southwest #1; tlr: Terrapin Landing Royale; tm: That Moraine.